24 DEC 1986

Scott C. Yaich
Wetlands Coordinator
Arkansas Games & Fish Commission
2 Natural Resource Drive
Little Rock, Arkansas 72205

Dear Scott:

On November 12, 1986, at the request of the Environmental Protection Agency (EPA) and the Agency for Toxic Substance and Disease Registry (ATSDR) we provided recommendations concerning potentially contaminated waterfowl in the Bayou Meto area. These recommendations were based on reports prepared by EPA, the Arkansas Game and Fish Commission and our meeting of October 30, 1986 at which we discussed these reports. These recommendations were provided to you on December 13, 1986.

Among the recommendations made by the ATSDR was that additional testing be conducted on edible portions of wood ducks and other waterfowl species that may reside in the area of concern as well as determining the extent of contamination in the local wood ducks, other waterfowl species and other game animals that may be consumed by humans. ATSDR also recommended that isomer-specific analyses of these organisms be conducted.

I have discussed this recommended additional sampling with ATSDR and they feel that it is appropriate to sample "other" waterfowl during the current migratory season. This will ensure that data are available on these species prior to the opening of hunting season in 1987. ATSDR also recommended that you wait until the 1987 wood duck nesting seasons to collect additional wood duck samples; this would better enable us to evaluate the wood duck data, since the original samples were taken during a nesting season.

In any waterfowl sampling episodes, each sample should be divided into three parts-edible portion, viscera, and other non-edible portion (head, skin, feathers, etc.). Samples collected during this migratory season can be frozen until all samples are collected. This way, all samples can be shipped at the same time and we will know exactly how many samples to allocate lab space for.

Based on my conversations with ATSDR, I believe that approximately 30 ducks (90 total samples) would be an appropriate sample size. Approximately 5 of these should be controls from the White River Natural Wildlife Refuge (or vicinity) and the remainder should be from the Bayou Meto area at points approximately 10 and 30 miles downstream from the confluence of Rocky Branch Creek and Bayou Meto. These locations will relate approximately to locations of wood duck samples taken in June and July 1985.

As you mentioned in your October 31, 1986 letter concerning the Bayou Meto wood duck situation, there is probably little chance of "other" waterfowl being contaminated with dioxin; however, as I mentioned earlier, I believe that this "other" duck sampling should be completed this migratory season with wood duck samples being collected during the 1987 breeding season, so that this information can be made available to the public prior to the 1987 hunting season.

I will contact you later to discuss other details such as lab space, shipping of samples, etc. In the meantime, if you have any questions please contact me at (214) 767-9092.

Sincerely,

Larry P. Rexroat
Superfund Enforcement Section

cc: Dr. Tom McChesney
Arkansas Department of Health

Carl Hickam
ATSDR

Steve Forsythe
U.S. Fish and Wildlife Service

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

MAY 29 1990

Mr. Edwin K. Gray
Chief, Emergency Response and Consultation Branch
DHAC/ATSDR
Executive Park
1600 Clifton Road, N.E. - Mail Stop E 32
Atlanta, Georgia 30333

Dear Mr. Gray:

This letter is a follow-up to our May 3, 1990, meeting in Atlanta with your staff regarding the Vertac, Jacksonville Landfill and Rogers Road Landfill Superfund sites, all located in Jacksonville, Arkansas. During this meeting, we discussed the remedial plans for these Superfund sites and we appreciate the input from your staff. Based upon the favorable reception our proposed remedies received from your staff, we presume that the following cleanup strategies for these sites are considered protective of human health by the Agency for Toxic Substances and Disease Registry (ATSDR). If you disagree, please let us know before June 8, 1990.

VERTAC SITE

We propose to remediate the Vertac offsite areas as follows:

Sewer Lines and Manholes:

Approximately 10,350 feet of active interceptor, 4350 feet of abandoned (since 1978) interceptor and several manholes contain 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD) contaminated sediments. These lines are buried 5 to 15 feet deep and follow Rocky Branch Creek in an undeveloped residentially-zoned area. Sampling conducted in 1984 showed that 2,3,7,8 TCDD contamination in abandoned and active interceptor sediments were as high as 70.5 ppb and greater than 200 ppb, respectively. The proposed remedy calls for removing the sediments from the active interceptor and manholes by hydraulic flushing, followed by remote TV camera inspection to assure that all sediments have been removed. Sediments would be dewatered and incinerated. A pipe liner would be installed in the active interceptor to improve structural stability and to avoid possible recontamination by inflow. The abandoned interceptor would be filled with grout to immobilize any contaminated sediments and to prevent flow into and out of the line.

Abandoned Trickling Filter Plant:

The trickling filter plant consists of two primary clarifiers, two trickling filters, two secondary clarifiers, an anaerobic sludge digester and sludge drying beds. The plant is located in an area zoned for industrial uses. 2,3,7,8 TCDD concentrations in the primary clarifier, sludge drying beds and sludge digester are 1.6 ppb, 2.3 ppb, and 12.4 ppb, respectively. No data are available for the trickling filters or the secondary clarifiers. However, since the primary clarifiers contain only 1.6 ppb, EPA is confident that the trickling filters and secondary clarifiers contain less than 1.6 ppb. The proposed remedy calls for treating the accumulated water in these units in activated carbon columns prior to discharge and incinerating the spent carbon and filter spools. The digester sludge (approximately 900 cubic yards) will also be incinerated. All the units in the trickling filter plant (such as clarifiers, digester, etc.) would then be demolished and the debris covered with a foot of clean soil. The sludge drying beds (approximately 0.5 acres) would also be covered with a foot of clean soil. This abandoned trickling filter plant will continue to be fenced and access restricted.

Active West Wastewater Treatment Plant:

This plant consists of a 3-acre aeration basin and two 22-acre oxidation ponds.- The majority of the plant lies in an industrial area, but the westernmost portion of the oxidation ponds lie in a residentially zoned area. Measured 2,3,7,8 TCDD concentrations in the sediments of the aeration basin, the north oxidation pond and the south oxidation pond (the final treatment unit) are 2.8 ppb, 0.97 ppb, and less than 0.3 ppb, respectively. The proposed remedy calls for dewatering the aeration basin, treating the water with activated carbon prior to discharge, demolishing the dikes of the aeration basin and covering the basin with a foot of clean soil. The oxidation ponds would likely be used for storage and release of effluent from the Vertac leachate collection and treatment (activated carbon) system. This wastewater treatment plant will continue to be fenced and access restricted.

Rocky Branch Creek and Bayou Meto Flood Plain:

Soil containing greater than 1 ppb TCDD from residential yards has already been excavated and stored on site. The disposition of this soil will be addressed in the ongoing on site remedial investigation/feasibility study.

Soil in the undeveloped residentially-zoned floodplain above the confluence of the east and west legs of Rocky Branch Creek contain up to 8 ppb 2,3,7,8 TCDD, with the majority of soil containing less than 5 ppb. In the Bayou Meto flood plain, fine grid sampling conducted in 1988 at areas where earlier (1984) sampling had shown 2,3,7,8 TCDD above 1 ppb showed 2,3,7,8 TCDD to be less than 0.3 ppb. The proposed remedy calls for excavating floodplain soil that contains greater than 1 ppb TCDD in undeveloped residentially-zoned areas and hauling it back to the Vertac site for ultimate disposal. Since the fine grid sampling indicates that the Bayou Meto floodplains contain less than 1 ppb 2,3,7,8 TCDD, these soils will remain in-place.

Rocky Branch Creek and Bayou Meto Sediments:

The 1987 and 1988 sediment sampling in Rocky Branch (7 locations) and Bayou Meto (11 locations) show 2,3,7,8 TCDD concentrations to be as high as 2.3 ppb, in the Creek, and as high as 1.03 ppb, in the Bayou. Through numerous discussions between EPA Region 6 staff and your staff, it has been agreed that these sediment concentrations do not pose a significant threat to human health. Therefore, the proposed remedy calls for these sediments to remain in place. However, a fishing ban will be maintained as long as fish tissue dioxin concentrations are above the Food and Drug Administration alert level.

JACKSONVILLE AND ROGERS ROAD LANDFILLS

These two inactive waste dumps contain approximately 5000 cubic yards of waste with concentrations of 2,3,7,8 TCDD less than 200 ppb. Both belong to the City of Jacksonville and are fenced. The cleanup objective we proposed for these sites is to excavate all material with dioxin concentrations above 10 ppb for treatment (dioxins to be destroyed to levels below 1 ppb). In addition, residual contamination exceeding 1 ppb will be capped by a foot or more of clean fill. The fence will be maintained by the City, and deeds will be noticed that the sites are considered unacceptable by EPA for residential use. ATSDR and CDC staff indicated agreement with these cleanup objectives. In addition, the 200 ppb existing concentrations were not deemed an imminent threat to health as long as the fence was intact.

If you have any questions or concerns on the proposed remedies at these Superfund sites, please write to me at the above address or telephone me at (214) 655-6725 (FTS 255-6725).

Sincerely,

Sam Becker
Chief, Superfund Enforcement Branch (6H-E)

cc: Carl Hickam, ATSDR, Dallas

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

DRAFT MEMORANDUM

SUBJECT: Sediment Dioxin Levels of Concern for Vertac Offsite

FROM: Fred Reitman, Ph.D.
Toxicologist, Superfund Enforcement Section (6H-EE)

TO: Addressees

As we agreed in our conference call last week, this draft memorandum is being forwarded to you for review and comment. It is written as a memo from myself to the Remedial Project Manager (Kate Arthur) for incorporation into the Administrative Record. Feel free to suggest any changes.

Recent sampling data indicate that sediments in and along the West Leg of Rocky Branch Creek near the Vertac NPL site are contaminated with 2,3,7,8-tetrachlorodibenzo-p-dioxin (dioxin). This memorandum is intended to assist in the determination of appropriate dioxin levels of concern for these sediments.

As you are aware, 1 ppb dioxin in soils has been employed previously by EPA as an "action level" for remediation. This value was derived from Kimbrough et al. (1984), which described 1 ppb as "...a reasonable level at which to begin consideration of action to limit human exposure to contaminated soil." It is therefore best viewed as a level of concern as opposed to an "action level", as the latter term implies 1 ppb should be interpreted as representing a fine line between safe and unsafe levels, and further suggests a necessity for dichotomous choices to be made with little regard for pertinent site-specific information. The 1 ppb level was not intended to be interpreted or applied in these manners. Rather, the assumptions and uncertainties underlying its development need to be understood and compared to site-specific circumstances. In addition, the level should also be evaluated in the context of more recent scientific information developed subsequent to publication of the Kimbrough et al. (1984) article.

The 1 ppb level was based on a cancer risk assessment which incorporated numerous conservative exposure and toxicity assumptions. Prominent among these were assumptions of daily contact with contaminated soils by young children, and that young children exhibiting pica behavior ingest 10 grams of soil per day. These two assumptions "drove" the risk assessment

(Kimbrough, personal communication). It is therefore critical that these particular assumptions be evaluated in the context of site-specific/more recent information.

The daily contact assumption can be reasonable for residential "backyard" soils which would be readily accessible to young, unsupervised children. In contrast, the affected Rocky Branch Creek sediments are not as readily accessible, and may be essentially inaccessible to very young children. In addition, the assumption of 10 grams/day soil ingestion has since become viewed as overly conservative; 1 gram/day is now viewed as a "reasonable worst-case" assumption for soil ingestion by young children. In other words, both of the critical assumptions supporting 1 ppb as a level of concern appear overly conservative for application to site-specific exposure scenarios involving Rocky Branch Creek sediments.

Another pertinent assumption in Kimbrough et al. (1984) involves the distribution of dioxin in the contaminated areas. More specifically, the 1 ppb designation was predicated on the assumption that 100% of the affected soils are contaminated at peak levels (i.e., uniform distribution of 1 ppb dioxin throughout the area of potential soil contact). Available information for Rocky Branch Creek sediments do not support the validity of such an assumption in this instance. Rather, dioxin contamination appears to be interspersed, which should lessen dioxin exposures and corresponding risks.

A final factor for consideration concerns EPA cancer potency estimates for dioxin. EPA recently proposed to reduce the current potency estimate (0.006 pg/kg body weight/day associated with upper-bound lifetime cancer risk of 1E-6; EPA, 1985) by about sixteen-fold (EPA, 1988). While this proposal has generated some controversy, it indicates that the current potency estimate is viewed as overly conservative within the Agency.

TMS Analytical Services provided dioxin estimates for eleven (composite) creek sediment samples on 9/29/88. Dioxin concentrations in these eleven samples reportedly ranged from 0.87-2.30 ppb; concentrations in eight of the eleven samples were between 1.00-2.00 ppb. Based on evaluation of the supporting QA/QC data, the analytical precision for each sample appears to be within approximately ±10%, This means it is unlikely that any of these concentrations could have been underestimated by significantly more than 0.1 to 0.2 ppb. The sediment concentrations may therefore be reasonably assumed to range from 1-3 ppb.

The recommendation of 1 ppb as a level of concern was qualified with, "The appropriate degree of concern for which management decisions are made should consider an evaluation of the specific circumstances at each contaminated site." (Kimbrough et al., 1984). Given the conservative assumptions underlying the 1 ppb level of concern, evaluation of these assumptions in the context of site-specific exposure scenarios applicable to Rocky Branch

ARKANSAS REPRODUCTIVE HEALTH MONITORING SYSTEM

1980-1982 FETAL LOSS RATES BY CITY

County	City	Cases	LBirths	Rate	Chi Sq
Prairie					
	DES ARC	7	142.00	4.70	.90
	DE VALLS BLUFF	5	64.00	7.25	.04
	FREDONIA	.	0.00	.	.
	HAZEN	7	116.00	5.69	.18
	ULM	.	12.00	.	.
	HICKORY PLAINS	2	6.00	25.00	4.36 *
	BISCOE	3	51.00	5.56	.10
	THURMANN	.	1.00	.	.
	UNKNOWN	.	1.00	.	.
SUM		24	393.00		
Pulaski					
	CAMMACK VILLAGE	.	0.00	.	.
	JACKSONVILLE	187	2620.00	6.66	.00
	LITTLE ROCK	564	10401.00	5.14	48.94
	NORTH LITTLE ROCK	286	4414.00	6.09	2.50
	SHERWOOD	27	419.00	6.05	.25
	SOUTHWEST LITTLE ROC	.	0.00	.	.
	COLLEGE STATION	6	72.00	7.69	.14
	ROLAND	4	96.00	4.00	1.12
	SWEET HOME	4	70.00	5.41	.18
	KENSLEY	3	136.00	2.16	4.51
	WRIGHTSVILLE	1	26.00	3.70	.37
	WOODSON	1	29.00	3.33	.53
	MABELVALE	23	442.00	4.95	2.16
	MAUMELLE	3	116.00	2.52	3.26
	FERNDALE	2	14.00	12.50	.89
	GENEVA	2	4.00	33.33	6.90 **
	GRAVEL RIDGE	.	3.00	.	.
	MORGAN	.	1.00	.	.
	UNKNOWN	.	71.00	.	.
SUM		1113	18934.00		

Creek sediments, and the proposal to reduce the EPA dioxin cancer potency estimate by sixteen-fold, the reported 1-3 ppb dioxin levels in Rocky Branch Creek sediments do not seem to pose an unacceptable health threat. Adherence to the 1 ppb action level in this case would therefore be a risk management decision based on considerations other than protectiveness of human health.

REFERENCES

Kimbrough, R.D., H. Falk, P. Stehr, and G. Fries. 1984. Health implications of 2,3,7,8-tetrachlorodibenzodioxin (TCDD) contamination of residential soil. J. Toxicol. Environ. Health 14:47-93

U.S. EPA (1985). Health assessment document for polychlorinated dibenzo-p-dioxins. Office of Health and Environmental Assessment, Washington, D.C. EPA/600/8-84/014F. NTIS PB86-122546/AS

U.S. EPA (1988). Draft updated assessments for 2,3,7,8-tetrachlorodibenzo-p-dioxin. Federal Register 53:24141

Addressees: Renate Kimbrough
EPA, Office of the Administrator (A-101)

Mark McClanahan
Agency for Toxic Substances and Disease Registry

Larry Needham
Centers for Disease Control

Deborah Swichkow
EPA, Office of Waste Programs Enforcement (OS-510)

200 of 1989

RECORD OF COMMUNICATION

☑ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)
(Record of item checked above)

TO: Sam Becker

FROM: Bert Cooper, ATSDR Atlanta

DATE: 6-7-90

TIME: 8:30 am

SUBJECT: Letter to EPA from ATSDR re: approval of EPA's proposed remedies for Vertac Offsite, Rogers Road, & Jacksonville Landfill.

SUMMARY OF COMMUNICATION

Bert called to say that he recd my letter asking for ATSDR's comments on our proposed remedies as we briefed them in Atlanta on 5/3. He coordinated the ATSDR response with Mark McClanahan of CDC & should get the response in the mail to us by 6/8.

It will say the following:

1) ATSDR is in agreement with EPA's proposals except that two clarifications are requested.

i) that we implement "erosion control" in areas that we excavate and are adding new fill material to, to minimize runoff.

and ii) that a fish sampling/monitoring program be implemented until such time as the fishing ban can be lifted.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

I told Bert that the Arkansas Game and Fish Comm. and the Arkansas Dept of Health were interested in the same type of fish monitoring program and that we are following up on that.

INFORMATION COPIES TO: Davis, Greenfield, Bondy, Edlund, Pettigrew, Williamson

R6-123 (2-84)

Duke A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 1, 1995

Mr. Masoud Arjmandi
Arkansas Department of
Pollution Control and Ecology
8001 National Drive
P.O. Box 8913
Little Rock, Arkansas 72219-8913

Subject: Request for Comments on the Vertac Superfund Site, Operable Unit ROD

Dear Mr. Arjmandi:

Please find enclosed the Draft Operable Unit 2 Record of Decision for the Vertac Superfund Site. We would appreciate ADPC&E's review and comments on the draft ROD as quickly as possible. EPA would like to finalize the ROD and hold an open house in Jacksonville to discuss the Remedy by December 20th.

Sincerely,

Richard Ehrhart
Remedial Project Manager

DEC 06 1995

#9 Duke

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

DEC 19 1995

Mr. George Pettigrew
Agency for Toxic Substances and
Disease Registry
1445 Ross Ave.
Dallas, Texas 75202

Dear Mr. Pettigrew:

The U.S. Environmental Protection Agency (EPA) Region 6 is requesting that the Agency for Toxic Substances and Disease Registry review EPA's draft Record of Decision (ROD) for Operable Unit 2 Media (Soils) at the Vertac Superfund Site, Jacksonville, Arkansas ("site").

In July of this year, your Atlanta office provided comments on EPA's proposed plan for the OU2 media, and emphasized that a 5 ppb not-to-exceed action level for dioxin would be protective of human health for a commercial/industrial re-use scenario for the site. Since that time, EPA has made several changes to the draft ROD, specifically in regard to the future land use scenario for the southern 100 acres of the site. Access to the southern 100 acres of the site will now be restricted to on-site workers which will be required to follow an approved health and safety plan during their daily site activities, and as such, dioxin contaminated soils that were origionally proposed to be landfilled will now be capped in place. We request that you evaluate whether capping dioxin contaminated soils between 5 ppb and 1,000 ppb, under the new restricted access land use scenario, would be protective of human health.

Please find enclosed a copy of the draft ROD for OU2 and a copy of EPA's risk assessment for on-site soils. If you need any additional information, you may contact Rick Ehrhart of my staff at (214) 665-6765.

Sincerely yours,

W.K. Honker, Chief
AR/OK/TX Branch
Superfund Division

Enclosures (2)

cc: Massoud Arjmandi, ADPC&E

To: Lou House
TEL: 639-0616 FAX 639-0655
From: Louise House
Reg I

17 pages

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
ENVIRONMENTAL SERVICES DIVISION
60 Westview Street, Lexington, Massachusetts 02173-3185

DATE: July 19, 1995

SUBJ: Request for Written Health Consultation
Former Three-C Electrical Company Site

FROM: Dean Tagliaferro, On-Scene Coordinator
Emergency Planning and Response Branch

TO: Louise House, Regional Representative
ATSDR

This memo is to request ATSDR to provide a written health consultation as whether or the levels of PCBs present in surface soils at the Former Three-C Electrical Company Site represent a health threat.

Physical Location and Site Characteristics

The Site consists of two properties, 280 Pleasant Street and an adjacent 8,235 square foot portion of 320 Pleasant Street; both of which are located on Pleasant Street in a mixed commercial/ residential area of Ashland, Massachusetts.

The Site is bordered to the north by Pleasant Street, across from which are residential properties; to the south by Conrail railroad tracks; to the west by the Framingham Excavation Company and a private residence; and to the east by a vacant lot. The Sudbury River is approximately 500 feet to the north of the Site, and the Nyanza Superfund Site is directly south beyond the railroad tracks.

The 280 Pleasant Street portion of the Site encompasses approximately 1.8 acres and contains a two-story brick building with a one story attached storage annex. The lot is relatively flat and contains a paved parking area, a fenced-in playground area, and an a partially fenced dirt/gravel covered area. The Site extends west of the fenced-in playground and dirt/gravel area of 280 Pleasant Street and includes an approximately 8,235 square foot lot owned by Framingham Excavation. There are storage trailers, construction equipment and miscellaneous debris staged on the portion of the Site owned by Framingham Excavation.

Site History

In 1976, the Three-C Realty Trust purchased the Site property from General Electric. In 1980, Jeffrey and Robert Hass purchased the property from Three-C Realty Trust. The Three-C Electrical Company ("Three-C") remained as a tenant on the property until 1982. In 1984, Latter Rain Christian Fellowship

rented space from the Hass brothers and in October 1991, Latter Rain bought the property at auction during foreclosure proceedings against Hass. The Hass brothers operated a general contracting business at the Site.

In 1992, Latter Rain sold a portion of the property covering approximately 8,235 square feet to Framingham Excavation. Latter Rain is the current owner and only occupant of the portion of the Site located at 280 Pleasant Street. **Latter Rain currently operates a non-denominational church, school and day care center at the Site.** Framingham Excavation is the current owner of the remainder of the Site and operates a construction company at this property.

Three-C specialized in the repair, maintenance and installation of high voltage equipment. These operations were performed at Three-C's customers' locations. As part of their operations at 280 Pleasant Street, Three-C stored liquid waste which contained polychlorinated biphenyl (PCB) oil.

In 1982, Three-C moved their operations from 280 Pleasant Street to 190 Pleasant Street. In 1983, a former Three-C employee alleged that in 1991, PCB-contaminated oil was spilled at the 280 Pleasant Street location. The Massachusetts Department of Environmental Protection (DEP) investigated the complaint and collected a sample from a stained area. The sample indicated the presence of PCBs at a concentration greater than 50 parts per million (ppm). The Massachusetts DEP directed Three-C to cleanup up the spill. Three-C denied involvement of the spill, however, Three-C agreed to finance the cleanup (Three-C and Hass split the cost of this action). Three-C removed approximately 1.25 tons of soil and disposed of the soil at a licensed disposal facility. Following the soil removal, the Massachusetts DEP collected one soil sample which contained 7.8 ppm PCBs. In 1985, the Massachusetts DEP concluded that the PCB-contaminated soil was removed and the amount of PCBs remaining were below hazardous levels.

Sampling Events

EPA has conducted three separate sampling events at the Site.

The first sampling event was performed by CDM in August of 1994. All samples were collected at a depth of zero to one foot. Attached are the results for PCB analysis and a site sketch. Please note that the area with the highest levels of PCBs is the playground for the children in the day care center.

The second sampling event was performed in January, 1995. Samples were collected from approximately zero to one foot in depth. Attached are the results for PCB analysis and site

sketches. Please note that the area with the highest levels of PCBs is the playground for the children in the day care center.

The third sampling event was performed in May and June 1995 and included collecting samples form zero to one foot in depth, one to two feet in depth and two to three feet in depth. Attached are the results for PCB analysis and site sketches.

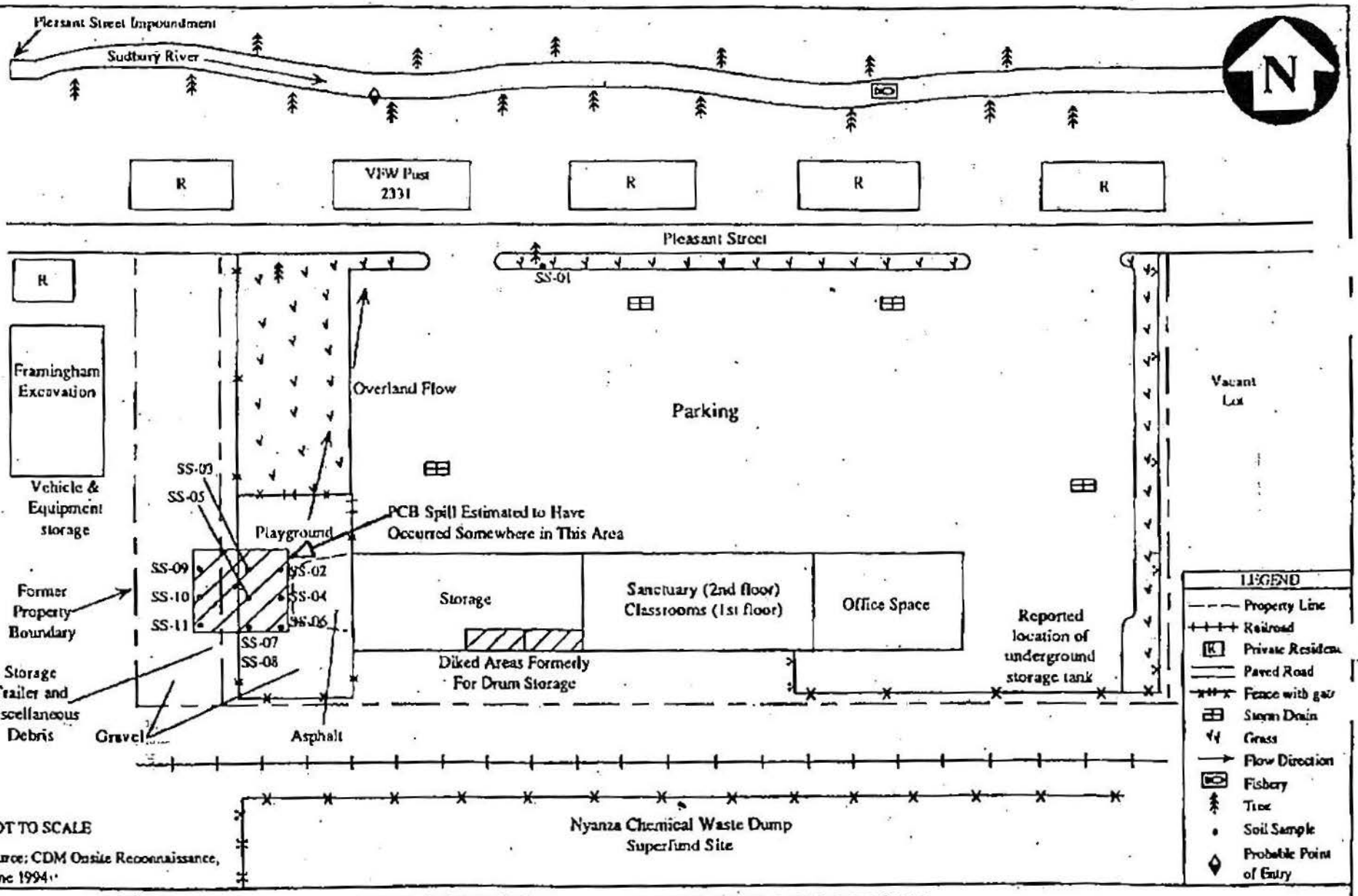
Please respond by July 21, 1995 if possible.

If you have any questions, please call me at (617) 860-4625.

Attachments

PCB results from samples collectd in August 1994

Location	Concentration
SS-02	3.1 ppm
SS-03	4.9 ppm
SS-04	29.0 ppm
SS-05	130.0 ppm
SS-06	45.0 ppm
SS-07	28.0 ppm
SS-08	19.0 ppm
SS-09	1.4 ppm
SS-10	4.9 ppm
SS-11	2.0 ppm



SITE SKETCH WITH SAMPLING LOCATIONS
THREE C ELECTRICAL CO.
ASHLAND, MASSACHUSETTS

CDM FEDERAL PROGRAMS CORPORATION
A Subsidiary of Camp Dresser & McKee Inc.

Figure 3

TABLE 1
Polychlorinated Biphenyls Screening Summary
Region I Technical Assitance Team

Three--C Electrical Site Investigation
Ashland, MA
5 January 1995

Soil Screening Results (ppm)

Sample/Station	Results Aroclor-1268	Instrument Detection Limit
001	0.3 J	0.6
002	6.0 U	6.0
003	9.0	6.0
004	41.0	30
005	8.0	6.0
006	23.0	18
007	9.0	6.0
008	13.0	6.0
009	6.0 U	6.0
010	6.0 U	6.0
011	6.0 U	6.0
012	24.0	18
013	160	120
014	180 J	60
015	11.0	6.0
016	6.0 U	6.0
017	6.0 U	6.0
018	6.0 U	6.0
019	6.0 U	6.0
020	6.0 U	6.0
021	6.0 U	6.0

Instrument: Thermo Electron Model 621A Portable Gas Chromatograph/Electron Capture Detector.

KEY
U – The material was analyzed for but not detected.
J – Data have been generated using a field screening method. Analytes are tentatively identified and concentrations are estimates due to Quality Control criteria.

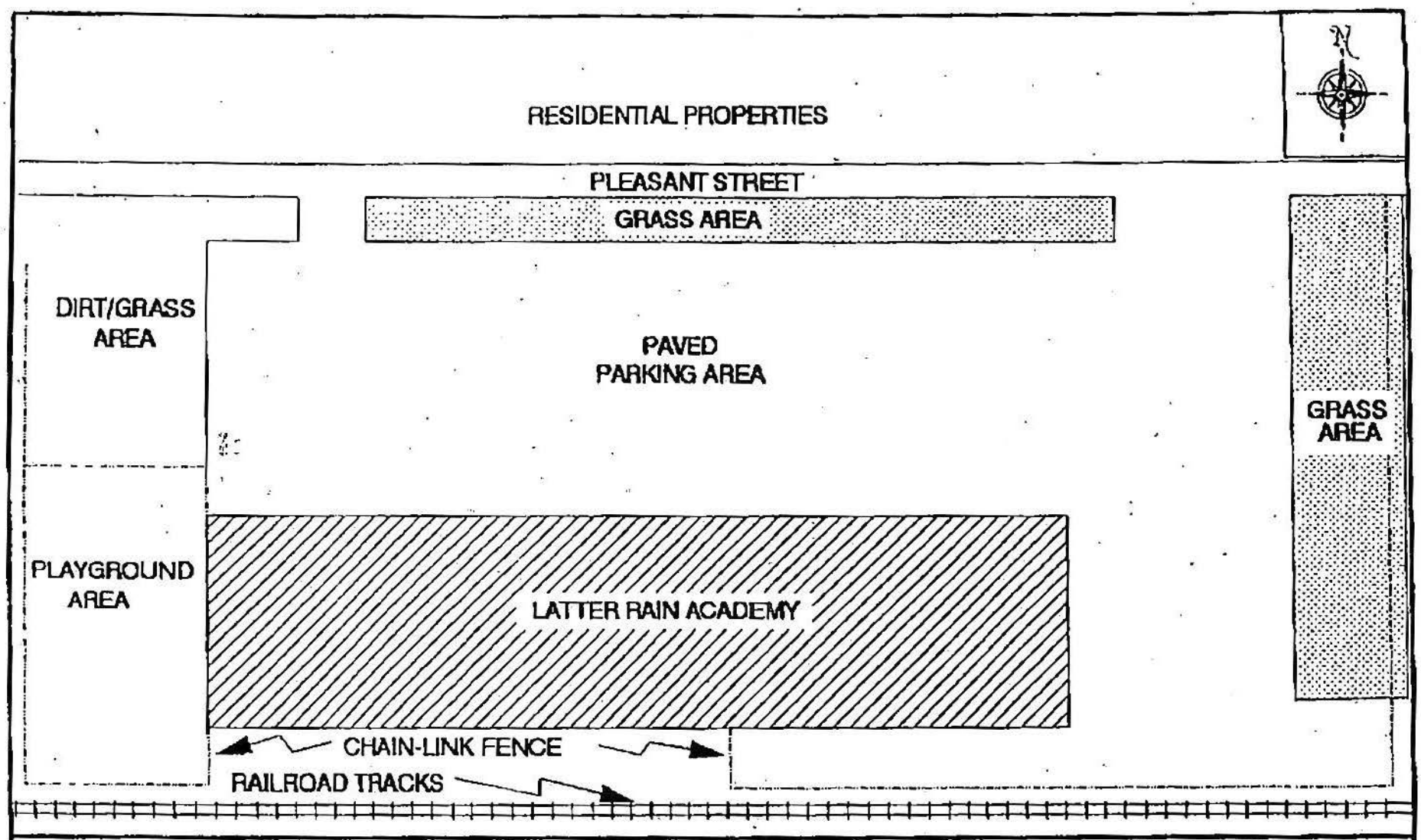


FIGURE 2

NOT TO SCALE

SITE DIAGRAM
FORMER THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

WESTON®
MANAGERS® DESIGNERS/CONSULTANTS®
REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY COFFEY	DATE 01/95	PCS # 1136
APPROVED BY	DATE 2/95	TDD # 01-9501-01

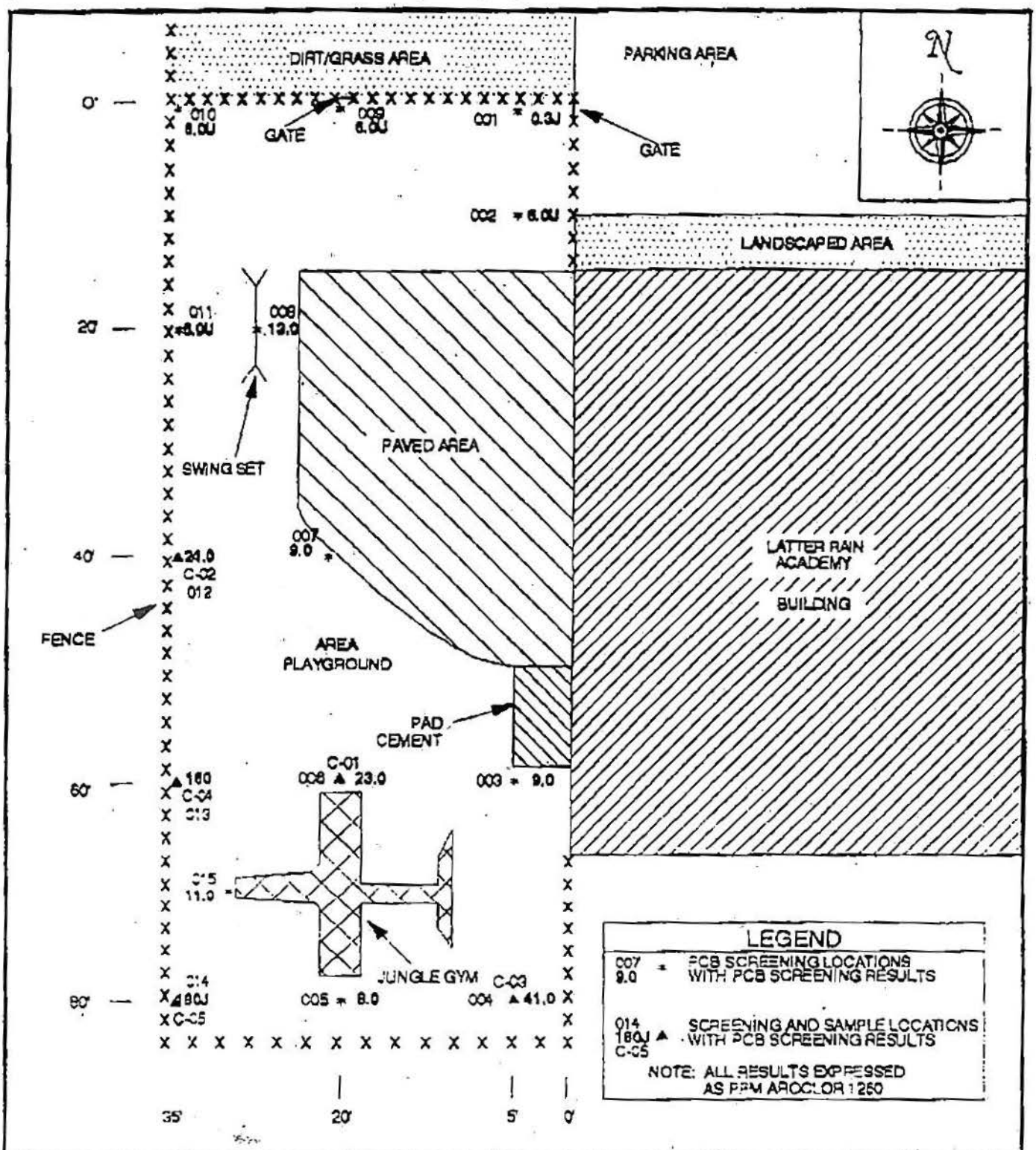


FIGURE 3 NOT TO SCALE

SCREENING SAMPLE LOCATIONS WITH RESULTS
PLAYGROUND AREA
FORMER THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

WESTON® MANAGERS DESIGNERS/CONSULTANTS
REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY: COFFEY	DATE: 01/95	PCS #: 1138
APPROVED BY: [illegible]	DATE: 3/95	TDD #: 01-9501-01

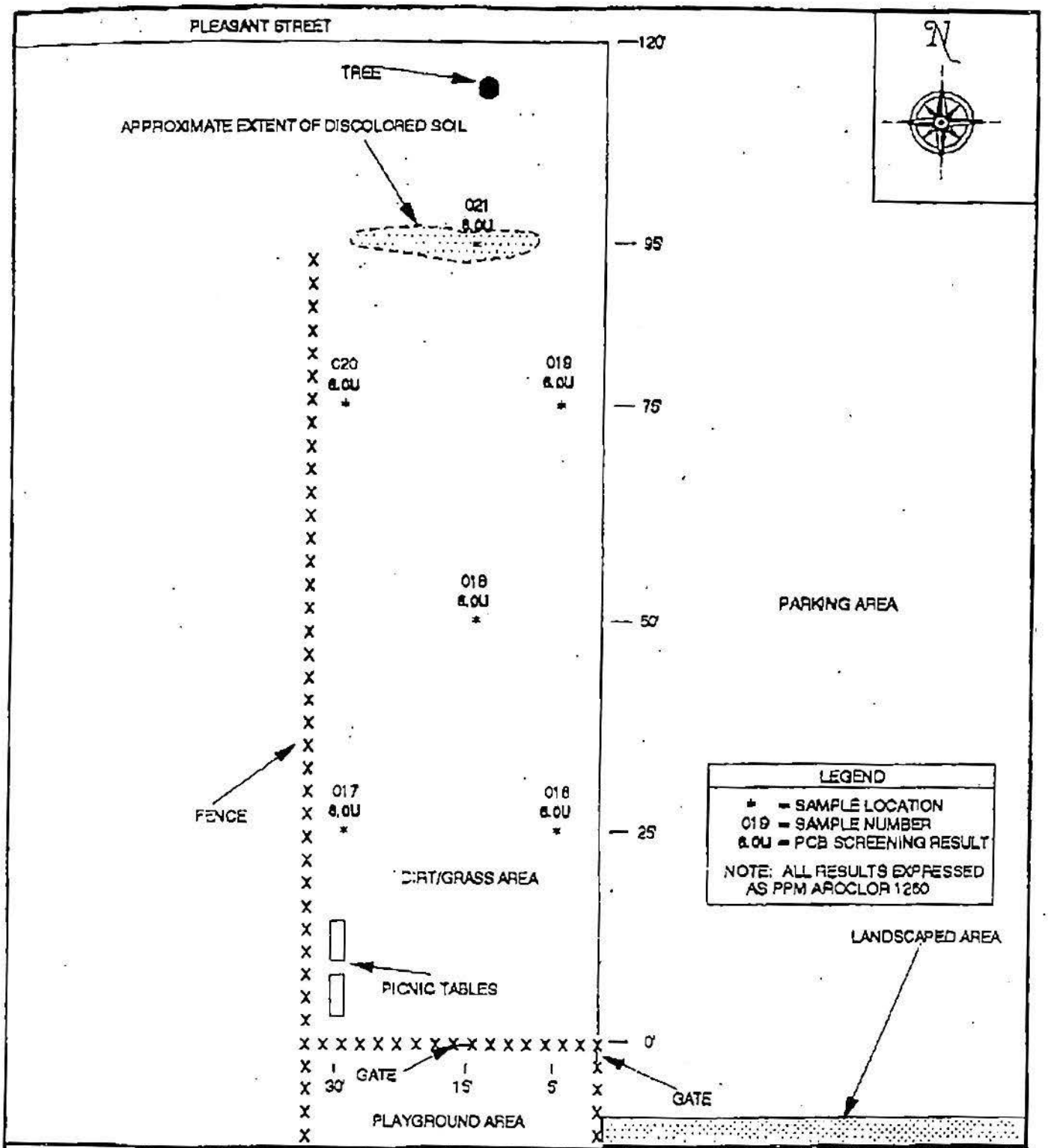


FIGURE 3A NOT TO SCALE

SCREENING SAMPLE LOCATIONS WITH RESULTS
DIRT/GRASS AREA
FORMER THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

WESTON® MANAGERS DESIGNERS/CONSULTANTS
REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY	DATE	PCS #
COFFEY	01/95	1138
APPROVED BY	DATE 3/95	TDD # 01-9501-01

Table 1

DRAFT

Three C Electrical Site
Ashland, Massachusetts
GC/ECD Screening Results

STATION	DEPTH	RESULTS (ppm) Arochlor 1260	COMMENTS
A+ 00	0"– 8"	0.5U	Refusal at 8"
A+ 15	6"– 12"	0.25U	Refusal at 18"
A+ 15	12"– 18"	0.25U	Refusal at 18"
A+ 30	0"–12"	0.5U	Refusal at 12"
A+ 45	0"– 12"	0.5*	Refusal at 12"
A+ 60	0"–12"	0.5U	Refusal at 12"
A+ 75	0'– 1'	0.5U	---
A+ 75	1'– 2'	0.5U	---
A+ 75	2'– 3'	0.5U	---
A+ 90	0'– 1'	1.0	---
A+ 90	1'– 2'	0.5U	---
A+ 90	2'– 3'	0.5U	---
A+ 97	0"– 10"	4.0	Refusal at 10"
A+ 105	0'– 1'	2.0	---
A+ 105	1'– 2'	0.5U	---
A+ 105	2'– 3'	0.5U	---
A+ 120	0'– 1'	4.0	---
A+ 120	12"– 14"	0.5U	Refusal at 14"
A+ 135	0'– 1'	9.0	---
A+ 135	12"– 22"	0.5U	Refusal at 22"
A+ 150	0"– 10"	11.0	Refusal at 18"
A+ 165	0'– 1'	14.0	---
A+ 165	1'– 2'	5.0	---
A+ 165	2'– 3'	0.5U	---
A+ 180	0'– 1'	138.0	---
A+ 180	1'– 2'	5.0	---
A+ 180	2'– 3'	3.0	---
B+ 00	0"– 12"	0.25U	---
B+ 00	12"– 14"	0.25U	Refusal at 14"
B+ 15	0'– 1'	0.5U	---
B+ 15	12"– 18"	0.5U	Refusal at 18"
B+ 30	0'– 1'	0.5U	---
B+ 30	12"– 16"	0.5U	Refusal at 16"
B+ 45	0"–12"	0.5U	Refusal at 12"
B+ 60	0"– 12"	0.6	Refusal at 12"
B+ 75	0"–12"	0.5	Refusal at 12"
B+ 90	0'– 1'	0.5	---
B+ 90	12"–18"	0.5U	Refusal at 18"
B+ 98	0'– 1'	0.5U	---
B+ 98	1'– 2'	0.5U	---
B+ 98	2'– 3'	0.5U	---
B+ 105	0' 1'	0.75	---
B+ 105	1'– 2'	0.5U	---
B+ 105	2'– 3'	0.5U	
B+ 120	0'– 1'	3.0	---
B+ 120	1'– 2'	0.5U	---

NOTES: Results are reported on a wet weight basis.

U = Result is below instrument's detection limit.

* = Arochlor 1254 quantified at 0.6 ppm for A+ 45 (0"–12")

Table 1 (continued)

DRAFT

Three C Electrical Site
Ashland, Massachusetts
GC/ECD Screening Results

STATION	DEPTH	RESULTS (ppm) Arochlor 1260	COMMENTS
B+ 120	2'– 3'	0.5U	---
B+ 135	0'– 1'	3.0	---
B+ 135	12"– 16"	11.0	Refusal at 16"
B+ 150	0'– 1'	231.0	---
B+ 150	1'– 2'	0.5U	---
B+ 150	2'– 3'	0.5U	---
B+ 165	0'– 1'	40.0	---
B+ 165	1'– 2'	2.5U	---
B+ 165	2'– 3'	0.75	---
B+ 180	0'– 1'	59.0	---
B+ 180	1'– 2'	49.0	---
B+ 180	24"–26"	3.0	Refusal at 26"
C+ 00	0'– 1'	0.5U	---
C+ 00	12"– 18"	0.5U	Refusal at 18"
C+ 15	0"– 10"	0.5U	Refusal at 10"
C+ 30	0'– 1'	0.5U	---
C+ 30	12"– 16"	13.0	Refusal at 16"
C+ 45	0'– 1'	0.5U	---
C+ 45	12"– 14"	6.0	Refusal at 14"
C+ 60	0'– 1'	0.5U	---
C+ 75	0"– 6"	0.25U	---
C+ 75	12"– 15"	0.25U	Refusal at 15"
C+ 60	12"– 18"	0.5U	Refusal at 18"
C+ 90	0'– 1'	0.5U	---
C+ 90	12"– 20"	0.5U	Refusal at 20"
C+ 99	0'– 1'	0.5U	---
C+ 99	12"– 20"	0.5U	Refusal at 20"
C+ 105	0'– 1'	0.5U	---
C+ 105	12"– 20"	0.5U	---
C+ 120	0'– 1'	0.5U	---
C+ 120	1'– 2'	2.0	---
C+ 120	2'– 3'	0.5U	---
C+ 135	0'–1'	1.0	---
C+ 135	1'–2'	0.5U	---
C+ 135	2'–3'	0.5U	---
C+ 150	0'– 1'	1.0	---
C+ 150	1'– 2'	0.5U	---
C+ 150	24"–26"	0.5U	Refusal at 26"
C+ 165	0'– 1'	0.75	---
C+ 165	1'– 2'	0.5U	---

NOTES: Results are reported on a wet weight basis.

U – Result is below instrument's detection limit.

Table 1 (continued)

DRAFT

Three C Electrical Site
Ashland, Massachusetts
GC/ECD Screening Results

STATION	DEPTH	RESULTS (ppm) Arochlor 1260	COMMENTS
C+ 165	2"- 3"	0.5	---
C+ 180	0"- 1"	38.0	---
C+ 180	1"- 2"	4.0	---
C+ 180	2"- 3"	0.5U	---
D+ 00	0"-1"	0.5U	---
D+ 00	12"-14"	0.5U	Refusal at 14"
D+ 15	0"-1"	0.5U	---
D+ 15	12"-16"	7.0	Refusal at 16"
D+ 30	0"-1"	0.5U	---
D+ 30	12"-14"	0.5U	Refusal at 14"
D+ 45	0"- 1"	0.5U	---
D+ 45	12"-20"	0.5U	Refusal at 20"
D+ 60	0"-8"	1.0*	---
D+ 60	12"-15"	0.25U	Refusal at 15"
D+ 75	0"-12"	0.75	---
D+ 75	12"-16"	0.5U	Refusal at 16"
D+ 90	0"-12"	5.9*	---
D+ 90	12"-24"	0.5	Refusal at 25"
XX+ 90	7"-12"	71.0E	---
XX+ 90	12"- 24"	26.0E	---
XX+ 90	24"-36"	110.0E	---
XX+ 105	8"-12"	150.0E	Refusal at 12"
XX+ 120	8"-12"	6.0	---
XX+ 120	12"-24"	0.5	---
XX+ 120	24"-36"	0.25U	---
XX+ 135	8"- 12"	9.0	---
XX+ 135	12"-24"	0.25U	---
XX+ 135	24"-36"	0.25U	---
XX+ 150	9"-12"	3.5	---
XX+ 150	12"-24"	0.25U	---
XX+ 150	24"-36"	0.25U	---
YY+ 90	7"-12"	20.0J	---
YY+ 90	12"-24"	31.0	---
YY+ 90	24"-36"	9.5J	---
YY+ 105	7"-12"	1.0U	---

NOTES: Results are reported on a wet weight basis.

U = Result is below instrument's detection limit.

J = Estimated result is less than the quantitation limit.

E = Estimated result, exceeding the calibration range.

* = Arochlor 1254 quantified at 1.0 ppm for D+ 60 (0"-8") & Arochlor 1254 quantified at 4.6 ppm for D+ 90 (0"-12").

Table 1 (continued)

DRAFT

Three C Electrical Site
Ashland, Massachusetts
GC/ECD Screening Results

STATION	DEPTH	RESULTS (ppm) Arochlor 1260	COMMENTS
YY+ 105	12"–24"	0.25U	---
YY+ 105	24"–36"	0.25U	---
YY+ 120	8"–12"	1.6	---
YY+ 120	12"–24"	0.4	---
YY+ 120	24"–36"	0.25U	---
YY+ 135	7"–12"	5.9	---
YY+ 135	12"–24"	1.3U	---
YY+ 135	24"–29"	5.0U	---
YY+ 150	8"–12"	1.5	---
YY+ 150	12"–20"	0.5U	Refusal at 25"
ZZ+ 90	4"–12"	0.25U	---
ZZ+ 90	12"–24"	0.25U	---
ZZ+ 90	28"–42"	0.5U	Refusal at 42"
ZZ+ 105	8"–12"	1.3	---
ZZ+ 105	12"–24"	0.25U	---
ZZ+ 105	24"–35"	0.1J	---
ZZ+ 120	9"–12"	1.3U	---
ZZ+ 120	12"–24"	0.25U	---
ZZ+ 120	24"–36"	0.5U	---
ZZ+ 135	6"–12"	1.0U	---
ZZ+ 135	12"–24"	0.25U	---
ZZ+ 135	24"–34"	0.5U	---
ZZ+ 165	10"–12"	0.5U	---
ZZ+ 165	12"–24"	0.5U	---
ZZ+ 175	7"–12"	87.0	---
ZZ+ 175	12"–24"	3.75U	---
ZZ+ 175	24"–29"	7.5U*	---
001	0"– 8"	0.75	Refusal at 8"
002	0'– 1'	0.5U	---
002	1'– 2'	0.5U	---
002	2'– 3'	0.5	---
003	0'–1'	2.0	---
003	12"–15"	0.5U	Refusal at 18"
004	0'–1'	3.0	---
004	12"–14"	0.5U	Refusal at 14"
005	0"–12"	6.0	Refusal at 12"
006	0"–12"	0.5U	Refusal at 12"
007	0'–1'	0.5U	---

NOTES: Results are reported on a wet weight basis.

* = Arochlor 1254 quantified at 11.0 ppm for ZZ+ 175 (24"–29")

U = Result is below instrument's detection limit.

Table 1 (continued)

DRAFT

Three C Electrical Site
Ashland, Massachusetts
GC/ECD Screening Results

STATION	DEPTH	RESULTS (ppm) Arochlor 1260	COMMENTS
007	12"–15"	0.5U	Refusal at 18"
008	0"–12"	11	Refusal at 12"
009	4"–12"	0.25U	---
009	12"–16"	0.25U	Refusal at 16"
010	4"–10"	1.0U	Refusal at 10"
010	6"–12"	0.25U	---
010	12"–24"	0.5U	---
010	24"–28"	0.25U	Refusal at 28"
011	4"–12"	1.0U	---
011	12"–24"	0.5U	Refusal at 26"
012	4"–12"	0.25U	---
012	12"–24"	0.5U	---
012	24"–26"	0.5U	Refusal at 26"
013	4"–12"	0.5U	---
013	12"–24"	0.5U	Refusal at 26"

NOTES: Results are reported on a wet weight basis.
U = Result is below instrument's detection limit.

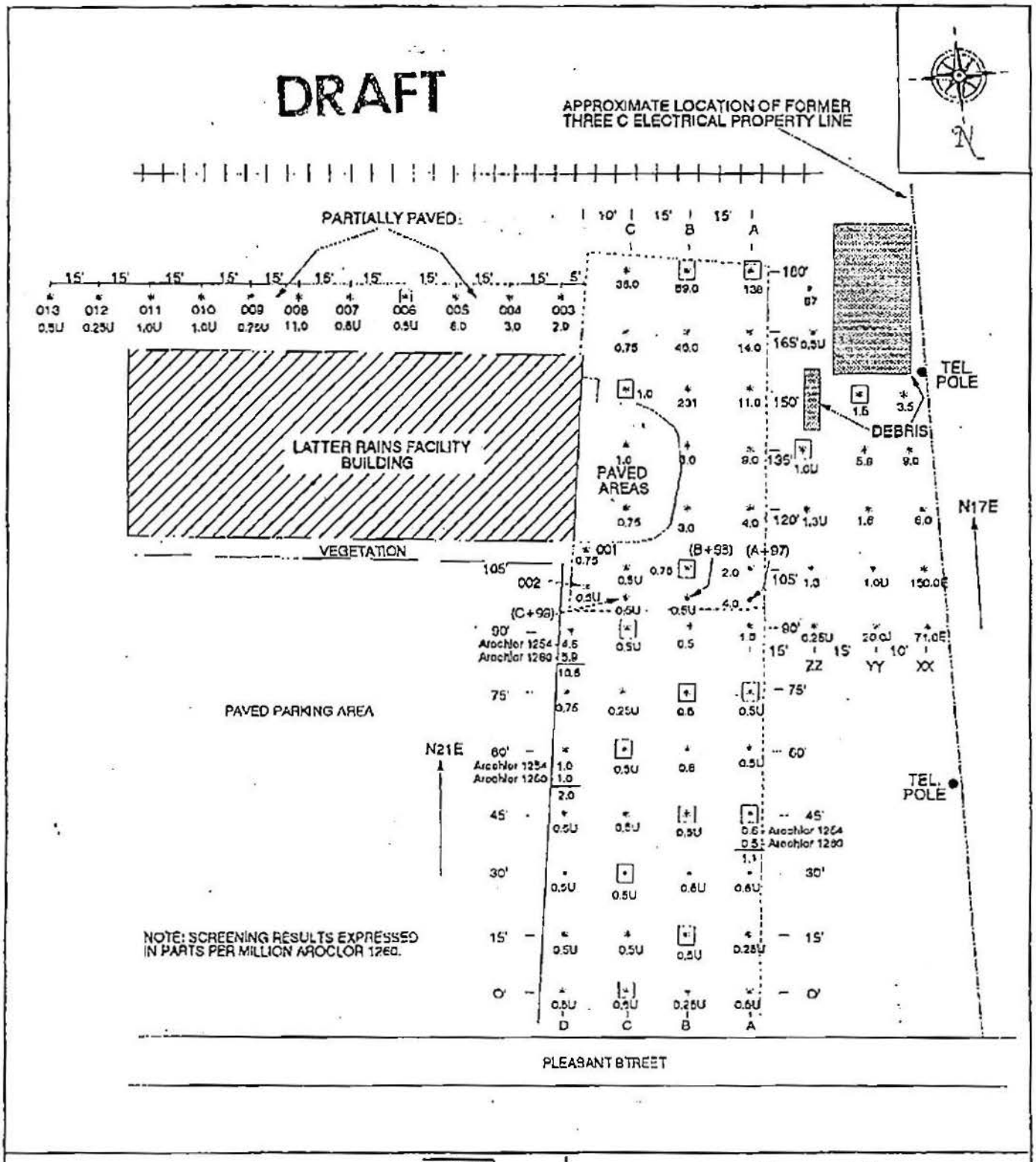


FIGURE 3A

PCB SCREENING RESULTS
(0 TO 1 FOOT INTERVAL)
THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

LEGEND

3.0 = SCREENING LOCATION WITH SCREENING RESULTS

[+] = SCREENING LOCATION PLUS LAB ANALYSIS FOR PCB, METALS

= RAILROAD TRACKS

= CHAIN-LINK FENCE

NOT TO SCALE

WESTON® MANAGERS DESIGNERS/CONSULTANTS
REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY	DATE	PCS #
ELC III	06/95	1370
APPROVED BY	DATE	TDD #
		01-9501-04B

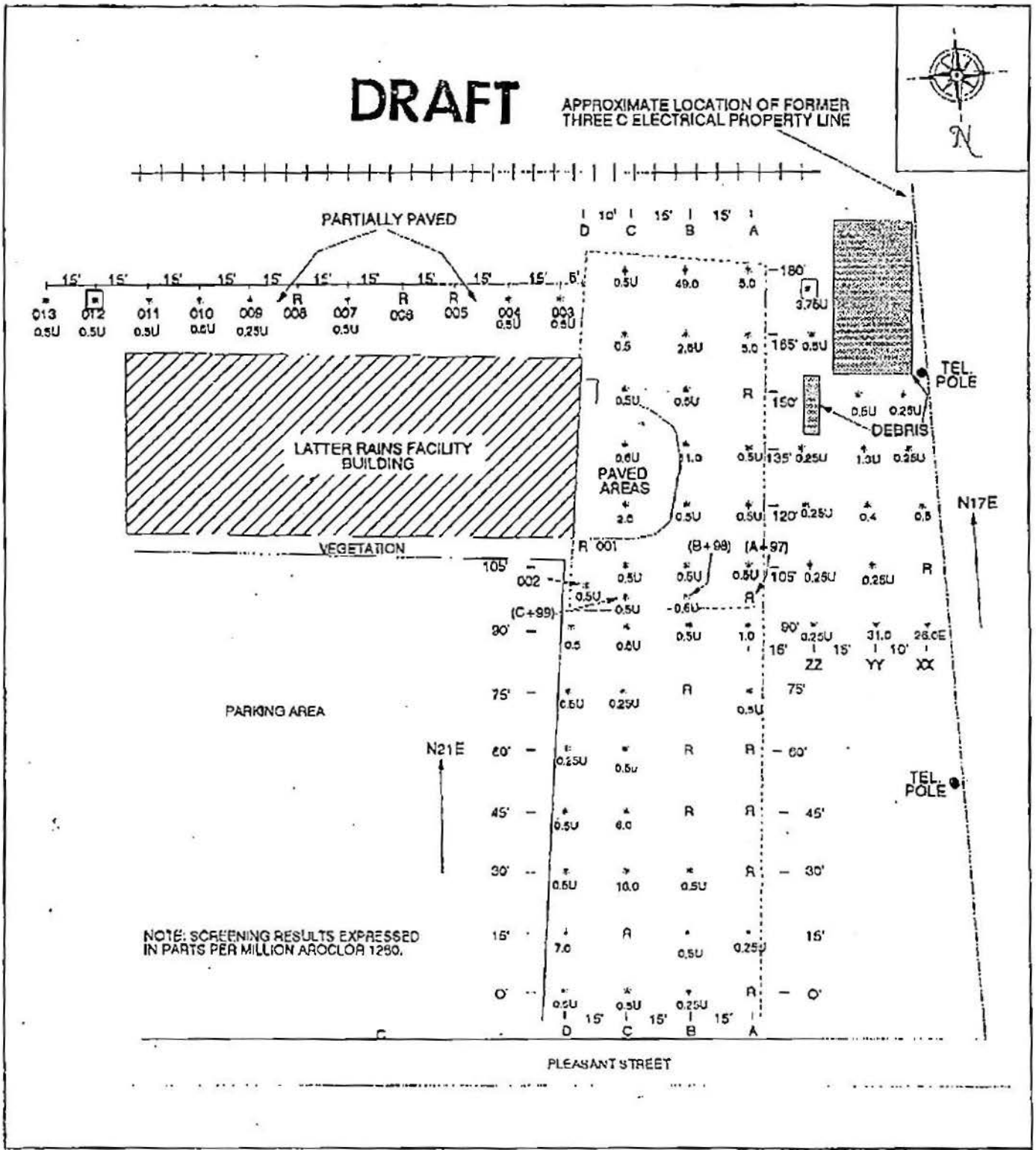


FIGURE 3B

PCB SCREENING RESULTS
(1 TO 2 FOOT INTERVAL)
THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

LEGEND

- 3.0 = SCREENING LOCATION WITH SCREENING RESULTS
- = SCREENING LOCATION PLUS LAB ANALYSIS FOR PCB, METALS
- = RAILROAD TRACKS
- = CHAIN-LINK FENCE

NOT TO SCALE

WESTON® MANAGERS DESIGNERS/CONSULTANTS
REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY	DATE	PCS #
ELC III	06/95	1370
APPROVED BY	DATE	TDD #
		01-9501-04B

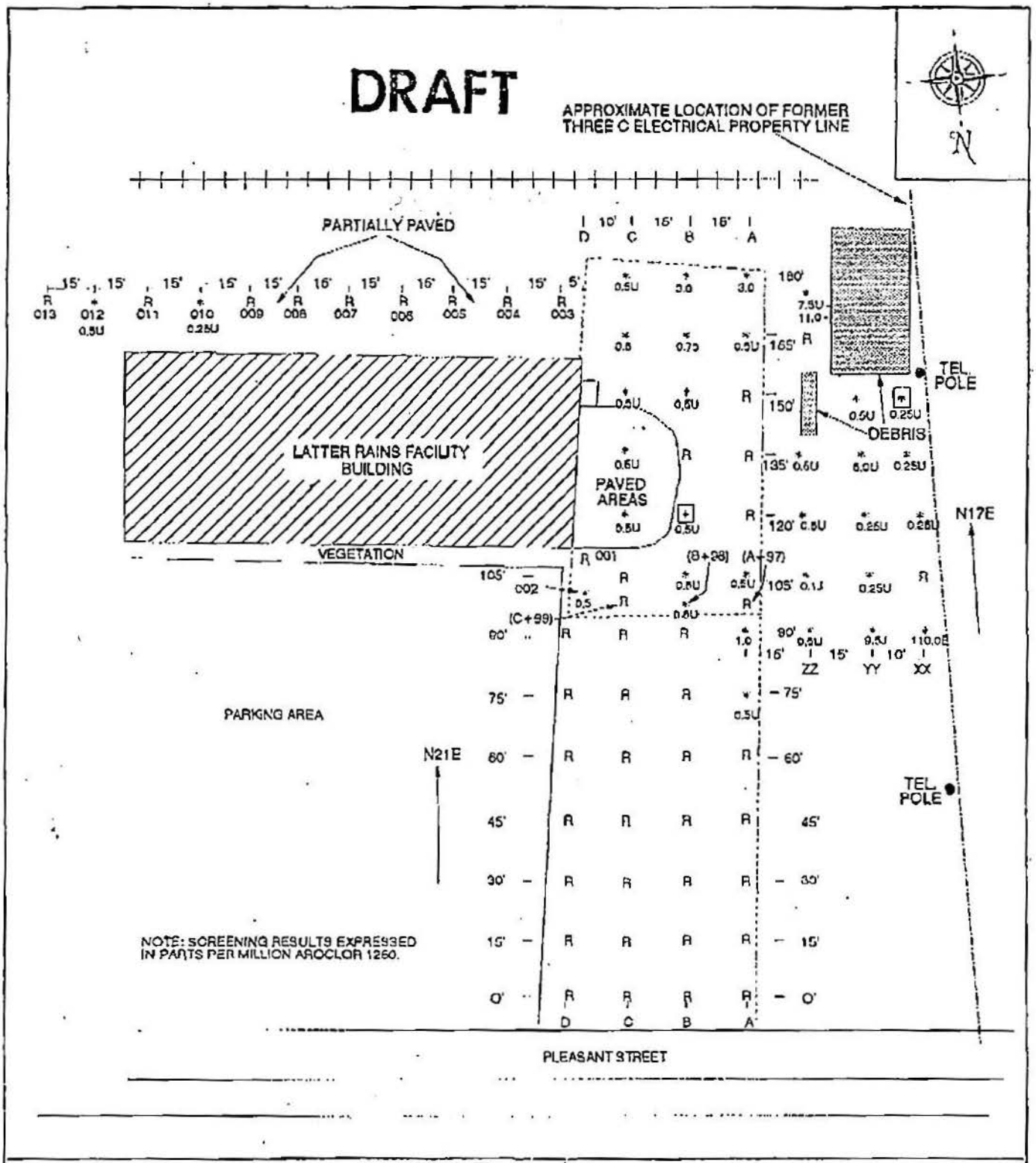


FIGURE 3C

PCB SCREENING RESULTS (2 TO 3 FOOT INTERVAL)
THREE C ELECTRICAL SITE
ASHLAND, MASSACHUSETTS

LEGEND

- 3.0 = SCREENING LOCATION WITH SCREENING RESULTS
- = SCREENING LOCATION PLUS LAB ANALYSIS FOR PCB, METALS
- +++++ = RAILROAD TRACKS
- ----- = CHAIN LINK FENCE

NOT TO SCALE

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REGION I TECHNICAL ASSISTANCE TEAM

DRAWN BY	DATE	PCS #
ELC III	06/95	1370
APPROVED BY	DATE	TDD #
		01-9501-04B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

July 3, 1991

MEMORANDUM

SUBJECT: Comments on the Draft Health Assessment Addendum - Vertac Chemical Corporation, Jacksonville, Arkansas

FROM: Allyn M. Davis
Director
Hazardous Waste Management Division (6H)

TO: Carl R. Hickam
Senior Regional Representative
Agency for Toxic Substances and Disease Registry

The Environmental Protection Agency (EPA) appreciates the opportunity to review the Draft Health Assessment Addendum for the Vertac Incineration project, dated May 22, 1991. After completing our review of the Addendum, we were disturbed that this document contains an engineering evaluation of the incinerator and its operating systems. EPA has serious concerns over the Agency for Toxic Substances and Disease Registry (ATSDR) performing engineering evaluations, which traditionally has been EPA's role in the remediation of hazardous waste sites.

While revising the Addendum to include some of our Health Assessment, EPA strongly urges ATSDR to review the results of the first trial burn, as well as the results of 102 days of ambient air monitoring from the shakedown period and the trial burn. Review of the second trial burn plan should also prove valuable in clarifying many of the issues raised about the operation of the incinerator.

It may also be useful for ATSDR to review the transcripts from the recent District Federal Court hearing held in Little Rock during June, concerning the National Toxics Campaign's motion for a preliminary injunction on the proposed 2nd trial burn. Specifically, we recommend that the testimony of Dr. Gregory Holton, a risk expert who has conducted risk assessments for over 35 incinerator sites around the country, and the testimony of Dr. Henry F. Simmons, Ph.D. toxicologist and Director of Toxicology at the University of Arkansas Medical Science Hospital, be reviewed in detail. Drs. Holton and Simmons analyzed the data from the first trial burn and the data collected during the ambient air monitoring program, to assess if there were any significant health risks associated with the trial burn and the incineration of the 28,000 drums. Their analyses showed that the excess cancer risk

from dioxin during the 360 hours for the second trial burn would be no more than 1.1×10^{-9}, and no more than 2.3×10^{-9} for burning the 28,000 drums over a year long period. Risk calculations were also made from the ambient air data collected during the first trial burn. Using this data a 7.3×10^{-9} risk of excess cancers was calculated. As you know, these risk estimates are far lower than the 1×10^{-4} to 1×10^{-6} risk range considered acceptable with Federal Regulations.

In summary, EPA recommends that the Draft Health Assessment Addendum be revised to reflect our concerns. Specifically, the Addendum should more appropriately reflect the potential for health effects on the nearby community based on actual emissions data generated from the facility, rather than simply be an evaluation of the design of the incinerator and its operational systems. Even so, we offer the following comments on the Addendum as it is currently written.

EPA agrees that a meeting between ATSDR and EPA would be beneficial before the Addendum to the Vertac Health Assessment is finalized. My staff will be contacting you shortly to set up a mutually acceptable time. If you have any questions or comments, please do not hesitate to contact me or Rick Ehrhart of my staff at 655-6582.

Attachments

cc: Mr. Harvey W. Rogers
ATSDR, Atlanta GA

EPA Comments on ATSDR Draft Health Assessment
Addendum for Vertac Site, dated May 22, 1991

1. Page 5, Paragraph 3;

Comment: Incinerator burning efficiency data has not been presented for ATSDR review.

Response: The results of the first trial burn have become final since ATSDR requested and reviewed information for the development of this addendum. The data presented in the trial burn report should allow ATSDR to more fully characterize the burning efficiency of the incinerator. Strip logs were also recorded during the incineration for Continuous Emissions Monitoring (CEM) parameters. These operational logs are available and should be useful in evaluating the operating efficiency of the incinerator.

2. Page 7, Paragraph 1;

Comment: Combustion efficiency is generally considered a conservative indicator of waste destruction efficiency. As carbon monoxide increases and carbon dioxide decreases, combustion efficiency decreases. However, a decrease in combustion efficiency is not always accompanied by a rise in emissions of unburned hydrocarbons. Therefore, measuring total hydrocarbons in the stack may be beneficial in assessing combustion efficiency.

Response: EPA agrees that monitoring CO in the stack gas is a much more conservative and sensitive estimate of combustion efficiency than that of measuring unburned hydrocarbons. While CO will continue to be used to monitor combustion efficiency, the Vertac Site Contractors (VSC) have decided to also monitor total hydrocarbons in the stack. Typically, CO control levels for incinerators (i.e., the level at which automatic waste feed shut offs (AWFSOs) occur) are set at around 100 ppm. The Arkansas Department of Pollution Control and Ecology (ADPC&E) and VSC have set this parameter for the Vertac incinerator at 50 ppm to further assure that complete combustion is occurring. Operational data from the incinerator shows that the average CO level in the stack gasses is around 10 ppm, or less.

3. Page 7, Paragraph 2;

Comment: The ATSDR will be interested in the results of the trial burns conducted for the Vertac incinerator. As ATSDR understands, the first trial burn was not successful due to unforeseen waste feed difficulties, and sample and analysis quality assurance problems. Neither of these difficulties indicate poor combustion system performance; however, they

preclude reliable calculation of destruction removal efficiency (DRE).

Response: ATSDR is welcome to review the results of the first trial burn and also the second trial burn plan. These reports document the changes that have been made to the incinerator waste feed system as well as the quality assurance procedures for data collection. The final results of the first trial burn, which were not available at the time of the ATSDR review, showed that a six-nines DRE was achieved for dioxin for two out of three runs. The DRE for dioxin for the third run was inconclusive due to problems with analytical procedures. The State and EPA believe that six-nines were achieved for all three runs. However, a second trial burn will be necessary for validation.

4. Page 9, Paragraph 2;

Comment: Through actual trial burn experience and research, the EPA has concluded that when the required Principal Organic Hazardous Constituents (POHC) DREs are met, the concurrent emission of Products of Incomplete Combustion (PICs) are at levels so low as to not present a public health hazard. Although the ATSDR has not seen any data that would contradict this conclusion, it should be noted that the data base leading to this conclusion is limited. ATSDR recommends that PIC data associated with trial burns continue to be compiled and examined with respect to potential human health effects so that additional confidence can be established.

Response: EPA recommends that ATSDR review the PIC emissions data from the first trial burn of this incinerator as well as the results of the upcoming second trial burn. Ten potential PICs were analyzed in the stack gasses during the first trial burn, all were found to be below the detection limit.

5. Page 11, Paragraph 2;

Comment: ATSDR is aware that some hazardous waste incinerator operators also continuously monitor unburned hydrocarbons in a CEM system and link the results to AWFSO systems. ATSDR could not find this provision in the Vertac stack monitoring description.

Response: CO is considered to be a much more conservative estimate of destruction efficiency than unburned hydrocarbons. Therefore, AWFSOs have and will continue to be triggered by CO levels, rather than the less sensitive parameter, unburned hydrocarbons. However, the Vertac Site Contractors have added CEM for unburned hydrocarbons in the stack gasses. This was done sometime after the first trial burn. CEM of unburned hydrocarbons will occur during the second trial burn and continuously thereafter, when burning waste.

6. Page 11, Paragraph 2;

Comment: It may intuitively seem preferable to rely on the more conservative indicator of performance such as CO, however, such an indicator can trigger AWFSO systems more than necessary, which in turn could disrupt optimal incineration efficiency. Such disruptions may ultimately result in increased total mass emissions of pollutants to the air.

Response: The implication that increased fugitive emissions are likely to occur, due to a large number of AWFSOs related to the CO interlock system is unfounded. When an AWFSO occurs at the Vertac incinerator, depending upon the specifics that trigger the cutoff, the temperature is maintained in the kiln and secondary combustion chamber, POHCs are still being burned in the kiln and in the secondary chamber, and no gasses leave the system before they have been burned. Furthermore, to date there have been no significant operational problems associated with high CO levels and AWFSOs at the Vertac incinerator.

7. Page 12, Paragraph 2;

Comment: 2,4,5-Trichlorobenzene is listed in the documents reviewed by ATSDR. There is no such isomer. Perhaps 2,4,5-Trichlorophenol is the isomer intended.

Response: That is correct. 2,4,5-Trichlorobenzene is a typographical error, and 2,4,5-Trichlorophenol was meant.

8. Page 13, Paragraph 3;

Comment: The ambient air samplers should monitor for compounds related to both stack emissions and fugitive emissions that could result from materials handling, including drum handling operations.

Response: The list of compounds measured under the ambient air monitoring program was developed to monitor for both stack emissions and fugitive emissions related to materials handling. The program requires monitoring for dioxins, herbicides, semi-volatiles, and particulates.

To summarize the air monitoring program, Phase 1 air monitoring was conducted from April 23, 1990 to May 14, 1990, in seven three-day sampling periods. The purpose was to evaluate the background air quality.

Phase 2 of the ambient air monitoring program was implemented during the trial burn field operations between August 30, 1990 and December 10, 1990. Monitoring was conducted for 102 calendar days, consisting of 34, three-day, sampling periods. Six sampling stations were utilized to monitor for dioxins, herbicides, semi-volatiles and particulates. At no time during the 102 days of monitoring were any of the action

levels exceeded for any of the selected parameters.

For Phase 3, of the program, EPA will conduct a minimum of 42 days of monitoring during the commencement of the production burn. Additional monitoring will be contingent upon the results of the initial monitoring.

9. Page 13, Paragraph 4;

Comment: When reviewing the overall stack and ambient air monitoring system, several observations can be made. First, the CEM stack monitoring provisions are the only continuous real time monitoring indicators that could be used for detecting incineration process upsets, which, in turn, could result in possible imminent exposure to nearby residents. In addition, fugitive air releases from materials handling would not be indicated by the CEM provisions, and may or may not be detected by the ambient air samplers, depending upon meteorologic conditions and sample collection averaging effects.

Response: The purpose of conducting ambient air monitoring is to ensure that the incinerator is operating such that the health and safety of the nearby residents is protected. Very conservative, acceptable levels for long-term residential exposure were developed in conjunction with ATSDR. Because the concentrations of the materials being monitored for, are so low, three days of continuous sample collection are required to exceed instrumentation detection limits. Because the action levels are based on long-term exposure, a three-day sampling period provides the information necessary to ensure that safe air quality is maintained. As yet, all the data show that ambient air concentrations are far below any health concern levels, and there are no indications that the operation of the incinerator or the materials handling operations are causing health-related risks to the nearby residents.

10. Page 18, Paragraph 2;

Comment: The use of CO as a CEM indicator of performance, which is required by RCRA, may result in more tripping of AWFSO devices than would otherwise be necessary. It might be feasible to concurrently monitor unburned total hydrocarbon emissions to refine the need for AWFSOs. Frequent and/or unnecessary triggering of AWFSO could result in ultimate increases in total systems emissions.

Response: An AWFSO does not mean that there are fugitive emissions being released from the incinerator. CO is a more sensitive indicator of combustion efficiency and, therefore, will continue to be the trigger for AWFSOs. To date, excess triggering of the AWFSO system has not been a problem at the Vertac incinerator.

11. Page 19, Paragraph 1;

Comment: There is concern regarding the possibility for a significant release of volatile materials on-site during waste and drum handling operations. Since the ambient air samplers have a delayed analytic response, it is not clear how such a release would be detected or characterized in a timely manner.

Response: All reasonable precautions have been implemented to reduce the possibilities of fugitive volatile emissions from spills and from the mishandling of drums during their transport to the incinerator. Because of the double and triple overpacks used on these drums and the relatively few drums that are moved at any given time, the chance for a significant offsite release is extremely small. In addition, any spill would be detected by site workers and would result in immediate cleanup procedures. Details of the actions to be taken in the event of a spill can be found in the Health and Safety Plan, dated November 30, 1990.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

MAR 22 1991

MEMORANDUM

SUBJECT: Request for ATSDR Review of Vertac Onsite Operable Unit 1 Proposed Remedy

FROM: Sam Becker, Chief
Superfund Enforcement Branch, 6H-E

TO: Carl Hickam
ATSDR Region 6 Representative

Attached please find the EPA Region 6 proposed plan to remedy onsite operable unit 1 of the Vertac Superfund site, which is located in Jacksonville, Arkansas.

As we discussed today, this is the formal request for ATSDR to perform an expedited review, for protection of public health, of the proposed remedy.

Because the Region is expecting to propose a remedy to the public in mid-April and select a final remedy in mid-June, 1991, an expedited review by ATSDR would be greatly appreciated.

As we discussed, the Region will be happy to present the proposed remedy and supporting information, to ATSDR at any location, be it in Dallas, Atlanta, or at the site itself. Given the schedule for selecting a remedy, it is suggested that the Region meet with ATSDR sometime before April 15, 1991.

Please contact me with regard to setting up a meeting time. Of course, if you or your staff have any questions at all, please contact me or the project manager, M. S. Ramesh, at (214) 655-6582.

Out of 1500 Draft
3-22-91

PROPOSED PLAN OF ACTION
Vertac Superfund Site
Jacksonville, Arkansas
March 1991

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the preferred option for addressing the onsite contamination problems at the Vertac site. In addition, the Plan includes summaries of other alternatives analyzed for this site. This document is issued by the Environmental Protection Agency (EPA), the lead agency for site activities. EPA will select a final remedy for the Vertac onsite area only after the information submitted during the comment period has been reviewed and considered during the decision-making process.

EPA is issuing this Proposed Plan as part of its public participation responsibilities under the **Superfund law [Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended in 1986.]** (Words in **bold** are further defined in the Glossary.) This document summarizes the information that can be found in greater detail in the **Vertac Site Remedial Investigation and Focused Feasibility Study for Operable Unit #1** report and other documents in the **Administrative Record** for the Vertac site. EPA encourages the public to review these documents in order to gain a more comprehensive understanding of the site and Superfund activities that have been conducted. The Administrative Record is available at the EPA office in Dallas and

the following locations:

City Hall
Jacksonville, Arkansas

Arkansas Department of Pollution Control & Ecology (ADPC&E)
8001 National Drive
Little Rock, Arkansas

The public is invited to comment on the remedial alternatives described in the Remedial Investigation/Focused Feasibility Study for Vertac Onsite Operable Unit #1, the Proposed Plan of Action and the Administrative Record. The public comment period begins on and ends .

During the public comment period, written comments may be submitted to:

Verne McFarland
Community Relations Coordinator
U.S. EPA, Region 6 (6H-MC)
1445 Ross Avenue
Dallas, TX 75202-2733

An open house is scheduled for at the , Jacksonville, Arkansas. Come by between p.m. and p.m. to informally discuss the Proposed Plan and other alternatives with EPA officials.

Additionally, oral comments will be accepted at a public meeting on at p.m. at the , Jacksonville, Arkansas. EPA will respond to all comments in a document called a **Responsiveness Summary**. The Responsiveness Summary will be sent to all those who comment in writing or at the public meeting and will be attached to the **Record of Decision**. It will also be made available to the public in the information repositories. The Record of Decision explains the final remedy

selected to correct contamination problems and to protect the public's health at a Superfund site. The final remedy could be different from the preferred alternative, described herein, depending upon new information EPA may consider as a result of public comments.

INTRODUCTION

In July 1989, Hercules Incorporated, a Potentially Responsible Party (PRP), signed an Administrative Order on Consent with EPA to conduct a Remedial Investigation and Feasibility Study (RI/FS) of the manufacturing areas (onsite) of the Vertac plant. The RI/FS, which is being conducted in two phases (or operable units), focuses on the central process area and areas immediately adjacent to it. The central process area was the main location for the manufacture of herbicides during the plant was in operation.

The first phase (Operable Unit #1) addresses above-ground media, such as buildings and other structures, chemical process and storage tanks, equipment and instruments, leftover chemicals, process wastes, etc. in tanks, drums and plastic bags, and contaminated soils removed from residential yards and a drainage ditch. The second phase (Operable Unit #2) addresses onsite soils, underground storage tanks and utility conduits, and groundwater. Hercules has contracted with Roy F. Weston, Inc., a consulting engineering company, to conduct the RI/FS under EPA oversight. The first phase of the RI/FS was completed in March

1991.

Based on the findings of the Operable Unit #1 RI/FS, EPA has proposed a plan of action to correct onsite contamination problems to protect the public's health at the Vertac site. These actions include onsite incineration of leftover chemicals in the process and storage tanks, spent (used) activated carbon stored in bulk storage tanks and drums, containerized materials such as discarded plant personnel clothing, drainage ditch sediments, remedial investigation wastes, oily leachate from the onsite french drain system, etc., soils brought onsite from offsite removal action and now stored onsite in plastic bags, plant trash and pallets which have been shredded and stored in plastic bags, and transformer oils, and onsite consolidation of debris from demolishing the buildings and equipment in an above-ground double-lined vault. The Proposed Plan of Action was determined following a comprehensive evaluation of several remedial alternatives. The remedial alternatives considered are described in detail in the Remedial Investigation and Focused Feasibility Study report for Operable Unit #1. This Proposed Plan of Action summarizes the preferred alternative as well as other remedial alternatives which are considered in the Feasibility Study report.

HISTORY OF THE VERTAC SITE

The first facilities on the Site (see Figure 1 for the plant's location) were constructed by the U.S. Government in the 1930s and

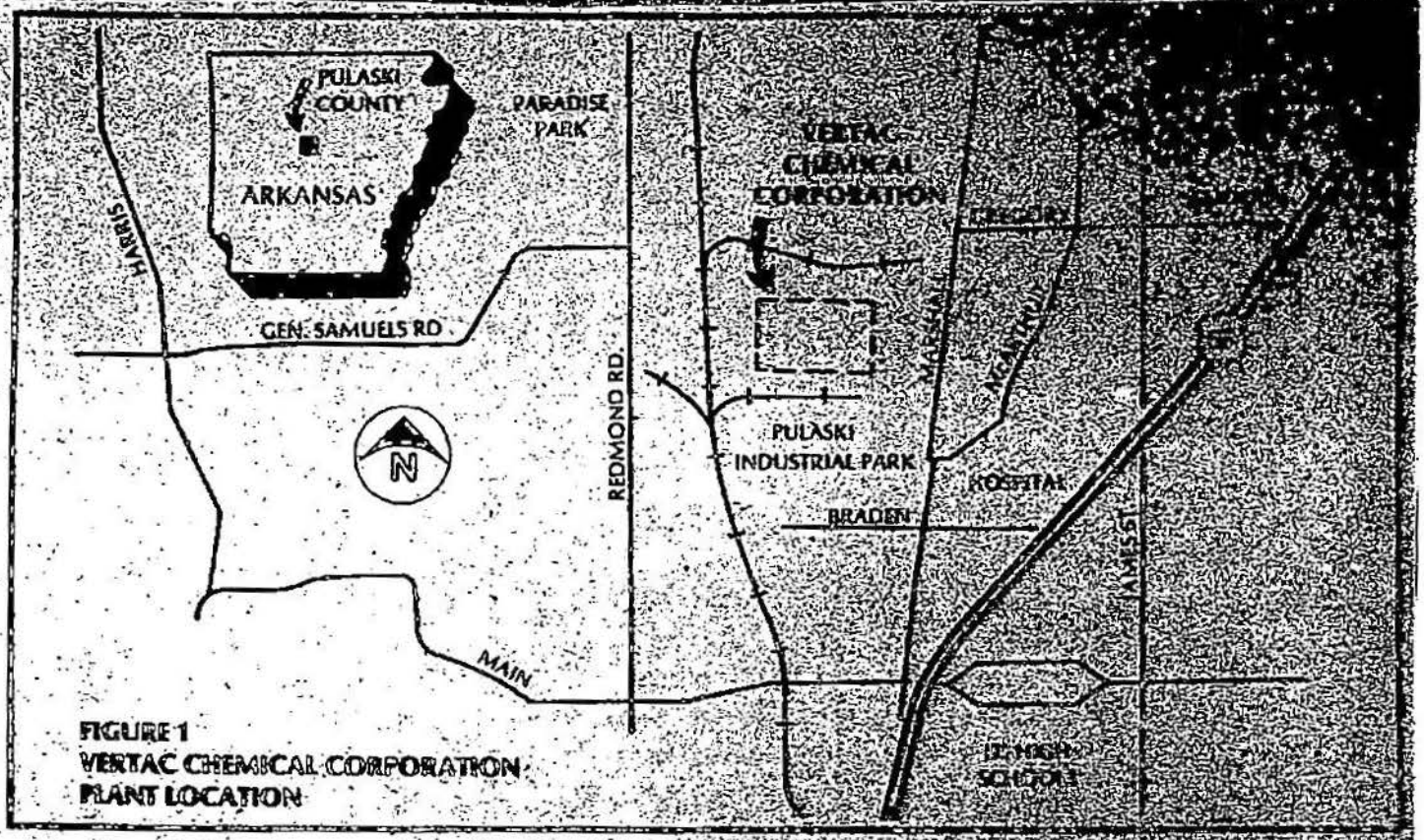


FIGURE 1
VERTAC CHEMICAL CORPORATION
PLANT LOCATION

1940s. These facilities were part of a munitions complex that extended beyond the present site boundaries. Little is known about government operations that occurred on land that is now part of the Site. In 1948, the Reasor-Hill Company purchased the property and converted the operations to manufacture insecticides such as DDT, aldrin, dieldrin, and toxaphene. During the 1950s, Reasor-Hill manufactured herbicides such as 2,4-dichlorophenoxyacetic acid (2,4-D), 2,4,5-trichlorophenoxyacetic acid (2,4,5,-T), and 2,4,5-trichlorophenoxypropionic acid (2,4,5,-TP), which is also called Silvex. Drums of organic material were stacked in an open field immediately southwest of the production area, and untreated process water was discharged from the western end of the plant to Rocky Branch Creek.

Hercules Powder Company purchased the Reasor-Hill property and plant in 1961 and continued to manufacture and formulate herbicides. The drums that were in the open area southwest of the central process area were buried in what is now referred to as the Reasor-Hill landfill. From 1964 to 1968, Hercules produced all of the herbicide Agent Orange, a 2,4,5-T/2,4-D mixture, that the U.S. Government demanded it produce. Hercules discontinued operations at the Site in 1971.

From 1971 to 1976, Hercules leased the plant site to Transvaal, Inc. (Transvaal), a predecessor company of Vertac. Transvaal resumed production of 2,4-D and intermittently produced 2,4,5-T.

Organic materials from these manufacturing processes were stored and then buried onsite in what is now referred to as the North landfill. Transvaal purchased the property and plant from Hercules in 1976. In 1978, Transvaal underwent a Chapter XI bankruptcy reorganization and ownership of the Site was transferred from Transvaal to the new company, Vertac Chemical Corporation, which is the present owner. Vertac operated the plant until 1986. On 31 January 1987, Vertac abandoned the Site. The U.S. EPA and Hercules took over management of the Site. This management has included the maintenance and overpacking of nearly 29,000 drums of organic material by U.S. EPA. Hercules has maintained treatment of groundwater collected in french drains, which were constructed downgradient of the landfills, and surface water runoff collected in ditches that drain to sumps.

Currently, there are no manufacturing operations at the Site. At the time operations were shut down, Vertac "mothballed" the plant. Mothballing involved flushing process lines and draining many of the process vessels. Continuing activities at the site include operation of the water treatment plant by Hercules. The water treatment plant treats surface water runoff and groundwater by phase-separation followed by adsorption through granular activated carbon. A series of drainage ditches and sumps, which surround the central process area, collects surface runoff and pumps it to the water treatment plan. A french drain system that runs along the western and southern sides of the burial and process areas is

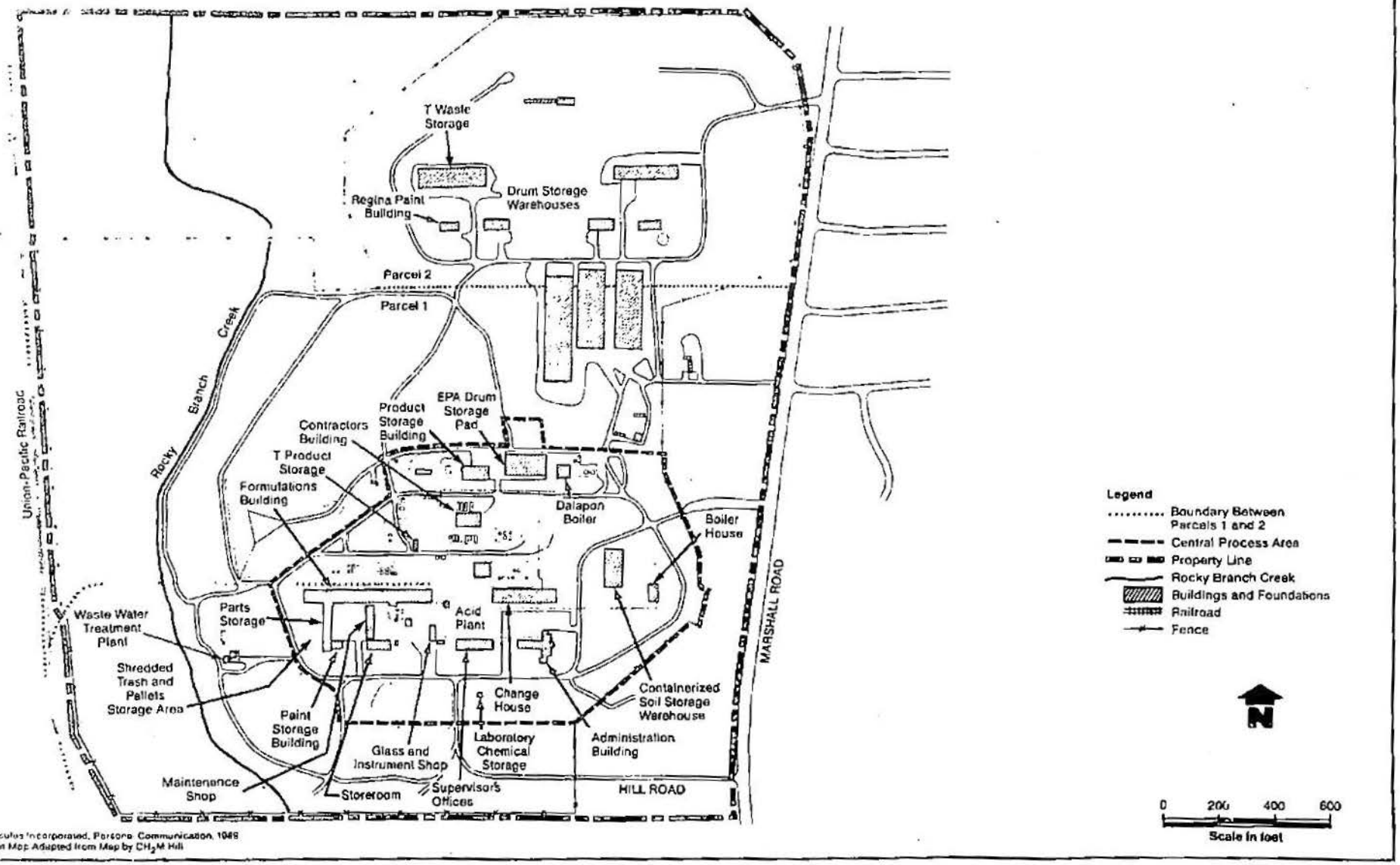
designed to intercept groundwater downgradient of the landfills and transport the groundwater to the water treatment plant. The treated effluent is discharged to the Jacksonville West Wastewater Treatment Plant.

The Vertac site was added to the National Priorities List (NPL) of hazardous waste sites in 1982. Once the site was placed on the NPL, money available from the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, commonly called Superfund, could be used to study the problems at Vertac and find ways to correct them to protect the public health and the environment.

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

The Vertac onsite investigation area is shown in Figure 2. Under the terms of an AOC, Hercules began Operable Unit #1 investigation in July 1989 and completed the RI/FS in February 1991. The purpose of the investigation was to characterize the probable nature and extent of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) distribution and other selected substances related to manufacture of phenoxy herbicides in the following above-ground materials and equipment:

- Contents and residues that are left over in process vessels.
- Miscellaneous containerized materials that are currently stored onsite, including spent carbon, french drain oily leachate, plant trash, pallets, containerized soils, and other



Hercules Incorporated, Personal Communication, 1988
Base Map Adapted from Map by CH_2M Hill

FIGURE 1-2 SITE MAP, VERTAC SITE
JACKSONVILLE, ARKANSAS

containerized disposables.

- o Process and administrative buildings and structures.
- o Process equipment (i.e., vessels, reactors, piping, and pumps).
- o Materials used to construct, add to, and maintain the chemical processing units and buildings (i.e., asbestos siding and insulation, and polychlorinated biphonyls (pcbs) in electrical equipment).

Operable Unit #1 media was analyzed for several physical and chemical parameters. 2,3,7,8-TCDD, 2,4-D, 2,4,5-T, chlorophenols, toluene, and asbestos were among the contaminants detected in the media.

The concept for the Focused Feasibility for Operable Unit #1 was based on the clear need for timely action and the need for an expedited, long-term remedy using proven technologies. The purpose of the Focused Feasibility Study was to determine which of the onsite media could be incinerated and which could be consolidated. The decision to focus on incineration as the primary remedial technology for materials contained in vessels and drums was based on the regulatory restrictions imposed on disposal of F-listed materials and the ability to burn selected materials in Operable Unit #1 using the incinerator currently being used onsite for incinerating the 29,000-plus drums.

SCOPE AND ROLE OF OPERABLE UNIT

The problems at the Vertac Superfund site are complex and therefore the site remediation can be accomplished most efficiently in five parts or operable units. These are:

- Operable Unit One: ADPC&E issued an order in 1979 that required Vertac, Inc. to improve their hazardous waste practices, and in 1980 EPA and ADPC&E jointly filed suit in federal district court against Vertac, Inc. and Hercules, Inc. A Consent Decree entered into by EPA, ADPC&E, Vertac and Hercules in January 1982 required an independent consultant to assess the conditions of onsite wastes and to develop a proposed disposal method for the wastes. The proposal, called the "Vertac Remedy," was deemed by EPA to be unsatisfactory and EPA returned to court in early 1984 for a resolution. The court decided in favor of the proposed remedy, which was implemented in the summer of 1984 and completed in July 1986.

  As part of the remedy, the Vertac plant cooling water pond and the equalization basin were closed and sediments from these units were removed and placed into an excavated area where earlier operators had buried drums of waste. The burial area was capped and a French drain and leachate collection system were installed around the burial areas. Ground water monitoring wells were also installed and a ground water monitoring program was initiated. The remedy did not address:

a) drums of still bottom wastes from the manufacturing process stored onsite or 2) contaminated process equipment, surface soils, and buildings.

- Operable Unit Two: In 1989, ADPC&E signed a contract to have the 29,000 plus barrels of waste incinerated onsite. The State used funds from a trust fund that was established when Vertac went bankrupt. Incineration of these wastes began in Fall 1990.

- Operable Unit Three: A Remedial Investigation/Feasibility Study was completed in June 1990 for the Vertac off-site areas contaminated with 2,3,7,8-TCDD. Off-site areas include the Rocky Branch Creek and Bayou Meto Flood Plain and stream sediments, sewer lines, old (abandoned) sewage treatment plant, and the West Wastewater Treatment Plant. EPA selected a remedy and signed a Record of Decision in September 1990.

- Operable Unit Four: This phase addresses the above-ground features at the Vertac site (onsite Operable Unit #1).

- Operable Unit Five: This phase addresses the soils, underground storage tanks and conduits, and groundwater at the Vertac site (onsite Operable Unit #2). The RI/FS for this phase is scheduled for completion in the spring of 1992.

This proposed plan addresses Operable Unit Four (onsite OU #1). The remedial investigation findings indicated that the tank contents, spent carbon, containerized materials (such as oily leachate), bagged soils, shredded trash and pallets, transformer oils (PCBs), and asbestos in building and process equipment and piping insulation, if allowed to enter the environment would be a principal threat to human health and the environment. The remedial objectives for these media are to prevent future exposure through treatment and/or permanent containment.

SUMMARY OF SITE RISKS

A risk assessment is a scientific procedure which uses facts and assumptions to estimate the potential for adverse effects on human health from exposure to chemicals. Risk is determined by evaluating known chemical exposure limits and actual chemical concentrations on site. The actual chemical concentrations are compared to the exposure to a known amount of the chemical shown to cause harm. The risk potential is expressed in terms of the chance of a disease occurring. Conservative assumptions that weigh in favor of protecting human health are made in this calculation. To protect human health, the EPA is most concerned with the probability that exposure to specific chemicals may result in cancer.

The national risk of developing some form of cancer from everyday sources over a 70-year life span is estimated at three in ten.

Activities such as too much exposure to the sun, occupational exposures, or smoking habits contribute to this high risk. The three in ten probability is the "natural incidence" of cancer. To protect human health, the EPA has set the risk range of one in ten thousand to one in one million excess cancer risk as a goal for Superfund sites. These may also be described by scientific notation: $1x10^{-4}$ to $1x10^{-6}$. A risk level of 1 in 1,000,000 means that one additional person out of 1 million people exposed could develop cancer as a result of extensive exposure to the remedial site.

The risk assessment begins by evaluating the current site risk, also called site base line risk, posed to human health by the Vertac site. For Operable Unit #1, chemicals of concern are 2,3,7,8-TCDD, 2,4-D, 2,4,5-T, chlorophenols, chlorobenzenes, etc. Currently there is no guidance for performing a base line risk assessment for contaminants contained in tanks, drums, plastic bags, etc. However, a scenario where shredded trash/pallets would burn and release smoke was developed to estimate risk. Trash/pallets was chosen because this media is combustible and has a high 2,3,7,8-TCDD concentration. It was assumed that a receptor at the plant fence line would inhale smoke for a 12-hour period. The resultant excess cancer risk due to inhaling 2,3,7,8-TCDD in smoke is 1.9 E-04, which is above the acceptable range. Similarly, other media, such as tank contents, oily leachate, etc., can pose a high risk, if released into the environment. A base line risk

assessment for the surface soils and groundwater will be performed during Operable Unit #2 RI/FS.

SUMMARY OF ALTERNATIVES

Five remedial alternatives were developed to provide an appropriate range of options and sufficient information to compare among alternatives. The alternatives include:

- Alternative 1: No action.
- Alternative 2: Onsite secure storage with onsite lined consolidation/containment unit.
- Alternative 3: Offsite incineration with onsite lined consolidation/containment unit.
- Alternative 4: Onsite incineration with onsite lined consolidation/containment unit.
- Alternative 5: Onsite incineration with offsite disposal.

Alternative 1

The no action alternative for Operable Unit 1 media at the Site provides a basis for comparing existing site conditions with those resulting from implementation of the other proposed alternatives. Under the no action alternative, no additional measures would be used to remediate contaminant sources. Access to the Site would be prohibited only by the existing site fence. Therefore, public access would only be passively restricted. No institutional controls, facility maintenance, or monitoring would be implemented.

Implementing no remedial activities for the Operable Unit 1 media

at the Site allows the existing contaminant sources to remain in place. The potential for exposure to contaminants is not reduced in this alternative.

The Superfund program requires that a no action alternative be considered at every site as a basis of comparison when evaluating other alternatives. This alternative would not decrease the toxicity, mobility, or volume of contaminants or reduce public health or environmental risks. Also, this alternative would not comply with State and Federal environmental regulations, and therefore, would not be favored by EPA.

Alternative 2

The onsite secure storage alternative would involve interim storage that complies with standards for the more hazardous contents of process vessels and drums onsite. This storage would be an interim remedy that would be used until more cost-effective and efficient remedial technologies become available. The major components of this alternative include:

- Construction of a storage building (see Figure 3) capable of containing the process vessel contents and drummed onsite wastes (spent carbon, french drain oily leachate, and other containerized materials). PCB transformer oils and compacted Regina Paint Building drums would also be contained.
- Construction of a permanent (long-term) aboveground, lined consolidation/containment unit (see Figure 4), and packing of

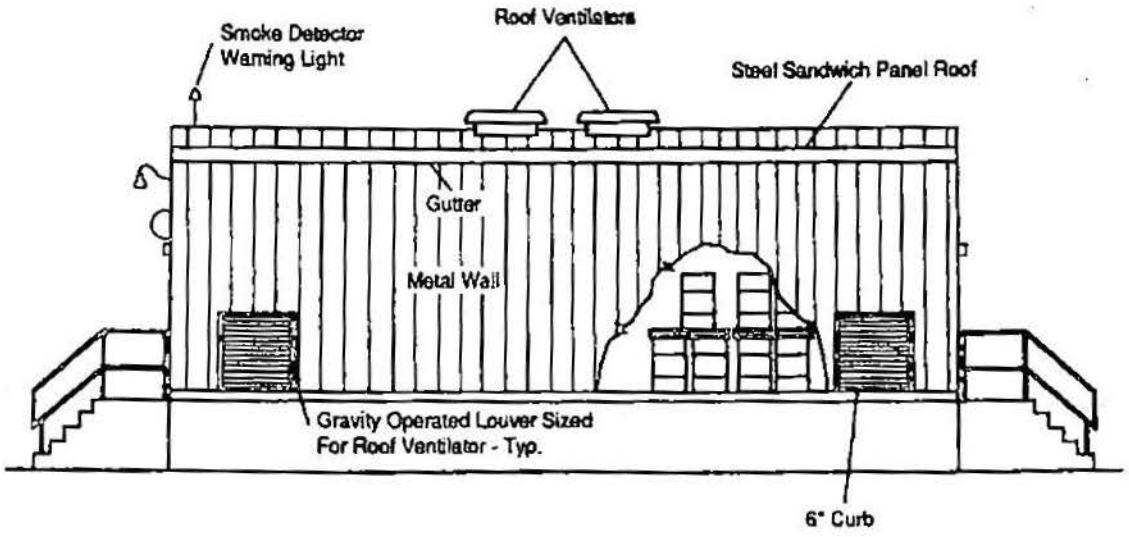


FIGURE ~~2~~ 3 CONTAINER STORAGE BUILDING - CONCEPTUAL DESIGN

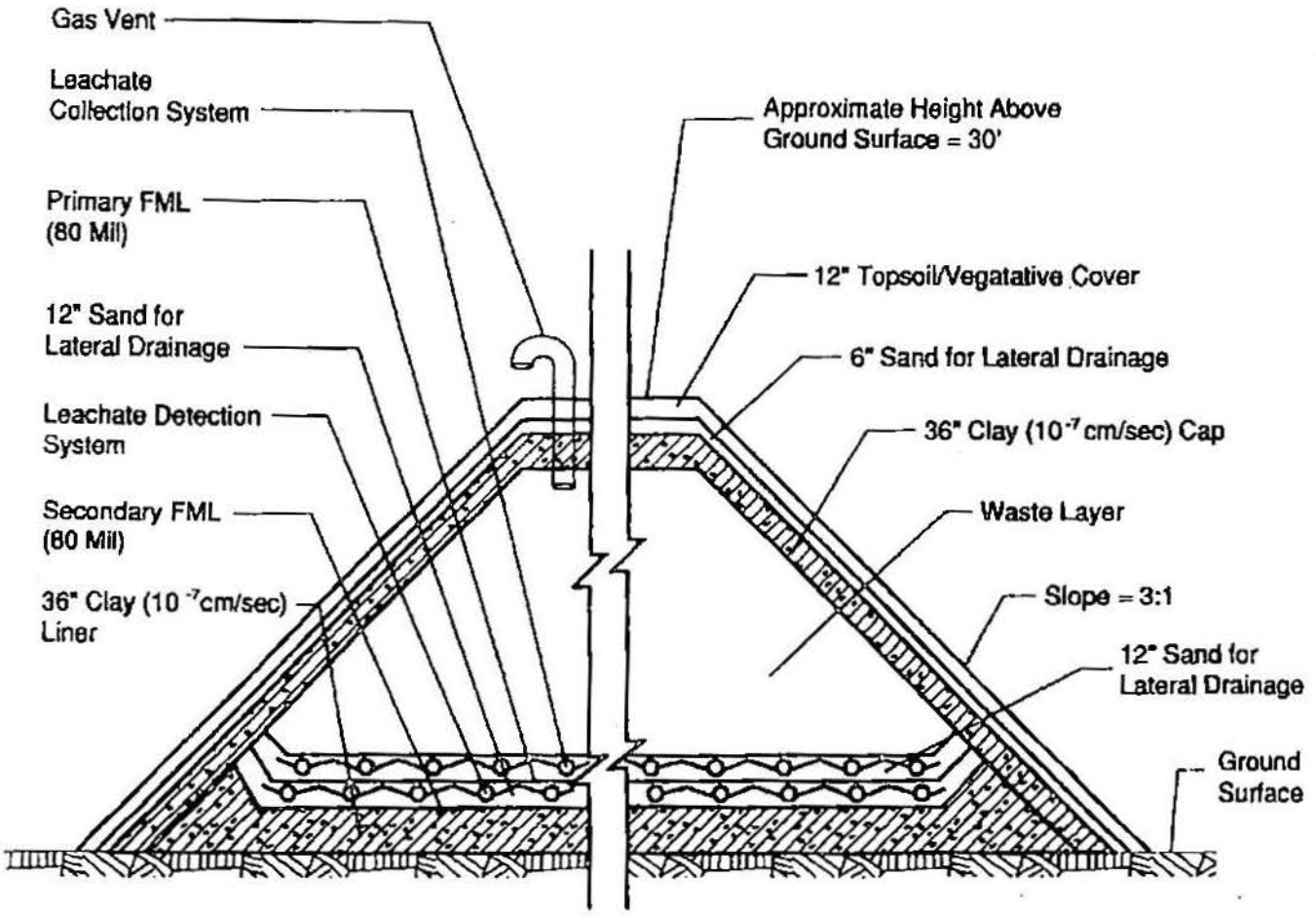


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FIGURE ~~5-1~~ DOUBLE-LINED CONSOLIDATION/CONTAINMENT UNIT - CONCEPTUAL CROSS-SECTION

the asbestos-containing materials and the demolition debris into the unit.

- o Abatement of friable asbestos-containing materials (ACM), including pipe insulation and possibly building shingles/tiles.
- o Emptying the contents of the process vessels into compatible containers.
- o Demolition of the buildings and process equipment in the central process area and the Regina Paint Building to the ground surface, with the exception of the bagged soil storage building and the bermed and tarped area containing bagged trash and pallets. These latter facilities would continue to function as interim storage units. The demolition debris and process equipment would be put into the consolidation/ containment unit. The active water treatment plant would not be demolished.
- o Periodic inspection of the container storage building and the consolidation/containment unit.

Cost - 20.7 million dollars

Time to implement - 2 years

This alternative does not comply with ARARs, does not reduce toxicity, mobility, or volume of wastes, and is an interim remedy. Therefore, EPA does not favor this alternative.

Alternative 3

This alternative would involve the transport of those wastes that

could not be consolidated onsite to an incinerator (see Figure 5) permitted to treat dioxin-contaminated materials. Those materials that could be consolidated would be packed in a lined consolidation/containment unit onsite. The main components of this alternative include:

- Emptying of process vessels, bulk storage containers, PCB transformers, and recontainerizing the contents in containers suitable for transport to an offsite facility.
- Compaction of the metal drums located inside the Regina Paint Building and placement into 85-gallon overpacks.
- Loading of the above materials as well as the drummed materials (spent carbon, french drain oily leachate, and other containerized materials) for transport on semitrailers to an offsite hazardous waste incineration facility.
- Construction of a permanent (long-term) above-ground lined consolidation/containment unit onsite and packing of the asbestos-containing materials, and demolition debris, into the unit.
- Asbestos abatement of friable asbestos-containing materials, including pipe insulation and possibly building shingles/tiles.
- Demolition of the central process area to the ground surface, with the exception of the active water treatment plant. The Regina Paint Building would also be demolished.
- Periodic inspection of the consolidation/containment unit.
- Shredded trash and pallets and containerized soils are

Figure

ROTARY-KILN INCINERATOR—ONE EXAMPLE OF A THERMAL DESTRUCTION UNIT

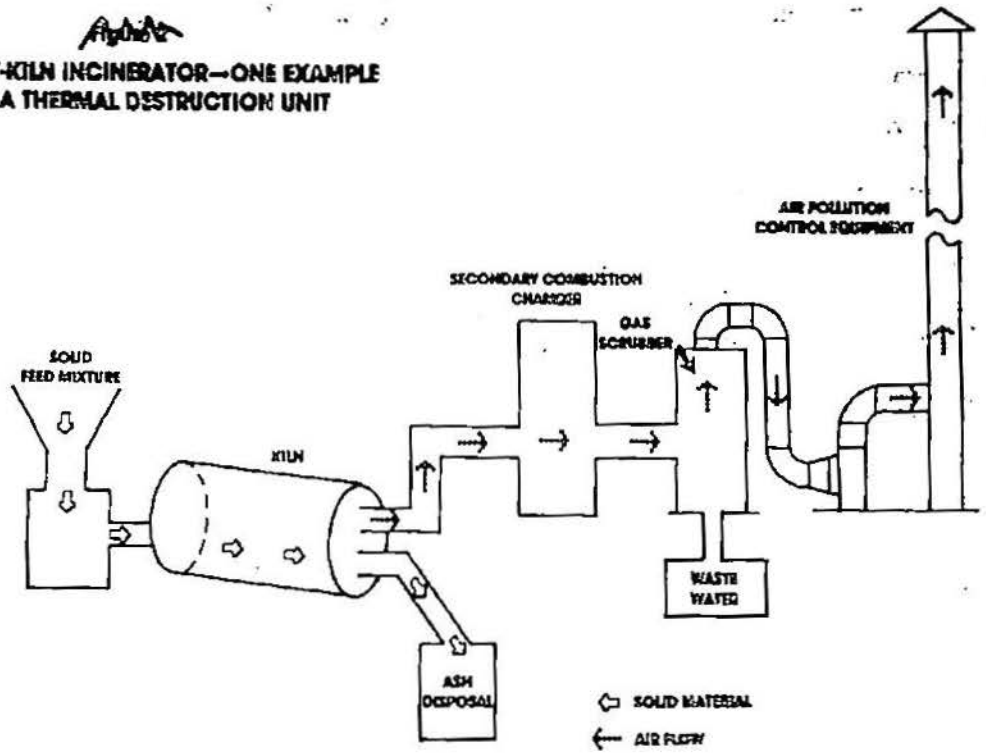


FIGURE 5

evaluated as part of both the onsite consolidation/containment and the offsite incinceration technologies.

- Option A: The shredded trash and pallets and containerized soils would be packed into the consolidation/containment unit along with the demolition debris, and any asbestos-containing materials.

- Option B: The shredded trash and pallets and containerized soils would be loaded onto semitrailers for transport to an offsite hazardous waste incineration facility.

- Option C: The shredded trash and pallets would be packed into the consolidation/containment unit and the containerized soils would be loaded onto semitrailers for transport to an offsite hazardous waste incineration facility.

Cost - Option A - 18.5 million dollars
Option B - 30.1 million dollars
Option C - 24.9 million dollars

Time to Implement - 4 years (assuming a commercial permitted facility is available)

So far a commercial facility has not been permitted for incineration of dioxin wastes. The actual cost for implementing this remedy could be higher, depending upon the location of the facility that could become available. Therefore, EPA does not favor this remedy.

Alternative 4

This alternative would involve incineration of some of the more hazardous materials and consolidation of the other materials in an onsite consolidation/containment unit. This alternative resembles Alternative 3 except that the incineration would be performed onsite instead of offsite. This alternative would comply with the RCRA requirements for the treatment of the more concentrated materials (process vessel contents, spent carbon, french drain oily leachate, and PCB transformer oils). The major components of this alternative are:

- Onsite incineration of the process vessel contents, spent carbon, french drain oil leachate, PCB transformer oils, shredded trash, Regina Paint Building drums (empty), and other containerized materials.
- Asbestos abatement for friable asbestos-containing materials. These materials would include pipe insulation and possibly building shingles/tiles.
- Demolition of the buildings and equipment in the central process area and the Regina Paint Building to the ground surface. This includes buildings, piping, debris, and process

equipment, except for the water treatment plant.

- o Construction of a permanent (long-term) above-ground lined consolidation/containment unit, and packing of the demolition debris, and asbestos-containing materials into the unit.
- o Delisting of the incinerator residues and packing the solids (salts) and ash into the consolidation/containment unit.
- o Periodic inspection of the consolidation/containment unit.
- o Shredded trash and pallets and containerized soils are evaluated as part of both the onsite consolidation/containment and incineration technologies.
  - Option A: The shredded trash and pallets and containerized soild would be packed into the consolidation/containment unit along with the demolition debris and asbestos-containing materials.
  - Option B: The shredded trash and pallets and containerized soils would be incinerated onsite along with the other incinerable media.
  - Option C: The shredded trash and pallets would be packed into the consolidation/containment unit and the containerized soils would be incinerated onsite.

Cost - Option A - 18.7 million dollars

Option B - 27.6 million dollars

Option C - 23.5 million dollars

Time to implement - 3 years

Alternative 4 - Option B is EPA's preferred alternative because it

is protective of public health and the environment and meets the federal environmental resulations that treatment technologies be used that permanently reduce the mobility, toxicity, and volume of the contaminants to the maximum extent practicable.

Alternative 5

This alternative would involve incineration of all materials characterized during Operable Unit 1 and disposal of the delisted incineration residues in an offsite landfill. This alternative offers a permanent remedial solution for each media, although implementation and cost of this solution may be prohibitive. The major components of this alternative are:

- Asbestos abatement of friable asbestos-containing materials. These materials would include pipe insulation and possibly building shingle/tiles.
- Demolition of the buildings and equipment in the central process area and the Regina Paint Building to the ground surface. This includes buildings, piping, debris, and process equipment, except the water treatment plant.
- Onsite incineration of Operable Unit 1 materials. This includes process vessel contents, french drain oily leachate, spent carbon, PCB transformer oils, shredded trash, shredded pallets, Regina Paint Building drums, nonasbestos-containing building materials, process equipment, process piping, containerized soils, other containerized materials, and debris.

- o Delisting of incinerator residues and disposal of these residues in an offsite landfill.

Cost - 68.9 million dollars

Time to implement - 5 years

EPA does not favor this alternative because incineration of buildings and equipment is not necessary to protect public health, would be difficult to implement and not cost effective.

EXPLANATION OF EVALUATION CRITERIA

U.S. EPA uses nine criteria, or standards, to evaluate alternatives for addressing a hazardous waste site. The remedy ultimately selected for a site must meet all nine criteria. They are as follows:

1. Overall Protection of Public Health and the Environment

This criterion addresses the way in which a potential remedy would reduce, eliminate, or control the risks posed by the site to human health and the environment. The methods used to achieve an adequate level of protection may be through engineering controls, treatment techniques, or other controls such as restrictions on the future use of the site. Total elimination of risk is often impossible to achieve. However, a remedy must minimize risk to assure that human health and the environment would be protected.

2. Compliance with ARARs

Compliance with ARARs, or "applicable or relevant and appropriate laws and regulations," assures that a selected remedy will meet all

related federal, state, and local requirements. The requirements may specify maximum concentrations of chemicals that can remain at a site; design or performance requirements for treatment technologies; and restrictions that may limit potential remedial activities at a site because of its location.

3. Long-Term Effectiveness or Permanence

This criterion addresses the ability of a potential remedy to reliably protect human health and the environment over time, after the remedial goals have been accomplished.

4. Reduction of Toxicity, Mobility, or Volume of Contaminants

This criterion assesses how effectively a proposed remedy will address the contamination problems. Factors considered include the nature of the treatment process; the amount of hazardous materials that will be destroyed by the treatment process; how effectively the process reduces the toxicity, mobility, or volume of waste; and the type and quantity of contamination that will remain after treatment.

5. Short-Term Effectiveness

This criterion addresses the time factor. Technologies often require several years for implementation. A potential remedy is evaluated for the length of time required for implementation and the potential impact on human health and the environment during the remediation.

6. Implementability

Implementability addresses the ease with which a potential remedy can be put in place. Factors such as availability of materials and services are considered.

7. Cost

Costs (including capital costs required for design and construction, and projected long-term maintenance costs) are considered and compared to the benefit that will result from implementing the remedy.

8. State Acceptance

The state has an opportunity to review the FS and Proposed Plan and offer comments to U.S. EPA. A state may agree with, oppose, or have no comment on the U.S. EPA preferred alternative.

9. Community Acceptance

During the public comment period, interested persons or organizations may comment on the alternatives. U.S. EPA considers these comments in making its final selection. The comments are addressed in a document called a responsiveness summary, which is part of the Record of Decision for the site.

The nine criteria are categorized into three groups: threshold criteria, primary balancing criteria, and modifying criteria. The

threshold criteria must be satisfied in order for an alternative to be eligible for selection. The primary balancing criteria are used to weigh major tradeoffs among alternatives. The modifying criteria are taken into account after public comment is received on the Proposed Plan.

Threshold Criteria

- o Overall protection of human health and the environment
- o Compliance with ARARs (applicable or relevant and appropriate requirements of other Federal and State environmental statutes)

Primary Balancing Criteria

- o Long-term effectiveness and permanence
- o Reduction of toxicity, mobility, and volume through treatment
- o Short-term effectiveness
- o Implementability
- o Cost

Modifying Criteria

- o State acceptance
- o Community acceptance

EVALUATION OF REMEDIAL ALTERNATIVES

The preferred alternative for remediating the Vertac onsite Operable Unit #1 media is Alternative 4-Option B. Based on the current information, this alternative would appear to provide the

best balance among the alternatives with respect to the criteria that EPA uses to evaluate alternatives. This section describes the performance of the preferred alternative against the seven criteria (two threshold plus five primary criteria) and discusses how it compares to the other alternatives considered.

Overall Protection. All of the alternatives, with the exception of the "no action" alternative, would provide a certain level of protection of human health and the environment by eliminating, reducing, or controlling risks through treatment, consolidation in a containment unit, or long-term storage. Alternative 2 is not considered a permanent solution because the materials of most concern (such as tank contents, spent carbon, etc.) remain onsite untreated. Alternatives 3, 4, and 5 would provide overall protectiveness of human health and the environment to the same degree by treatment and/or consolidation in a containment unit.

Compliance With Applicable or Relevant and Appropriate Requirements (ARARs). Very few ARARs are applicable to the media of concern. Of those that do apply (such as TSCA requirements for treatment of PCBs), no action would not comply with any of them. Alternative 2 also does not comply with ARARs because TSCA requirements for treatment of PCBs will not be satisfied and onsite storage beyond one year would be a violation of RCRA. Alternatives 3, 4, and 5 meet or exceed the ARARs and remedial action goals.

Long-Term Effectiveness and Permanence. Under the "no action"

alternative, risk will remain or increase as the plant continues to deteriorate. Secure storage of the more hazardous wastes in a building onsite (Alternative 2) would not be considered a permanent solution. Alternative 5 would be considered the most permanent remedy with the lowest residual risk since all contaminated media would be treated by incineration. Alternatives 3 and 4 provide the same degree of effectiveness by treatment and consolidation of wastes in a containment unit, and are fully protective of human health.

Reduction of Toxicity, Mobility, or Volume of Contaminants Through Treatment. There is no reduction of toxicity, mobility, or volume through treatment in Alternatives 1 and 2. Alternatives 3 and 4 achieve the same degree of reduction of toxicity, mobility, or volume through treatment. Alternative 5 provides the greatest reductions in toxicity, mobility, and volume.

Short-Term Effectiveness. This criterion is not applicable to Alternative 1 since no action would be taken. Increased risk to community, workers, and the environment during the implementation of the remaining alternatives would be the same.

Implementability. This criterion is not applicable to no action alternative. The technologies involved in implementing Alternative 2 are all proven, and commercially available (i.e., construction, demolition, asbestos abatement, etc.). So far no commercial

facility has been permitted to incinerate dioxin containing wastes and therefore, Alternative 3 is not implementable. Alternatives 4 and 5 are implementable, but incinerating buildings and process equipment (Alternative 5) would be a very difficult task.

Cost. The total cost for the preferred Alternative is $27.6 million. The cost for the action alternatives range from $18.5 million to $68.9 million.

State Acceptance. The Arkansas Department of Pollution Control and Ecology has been briefed on the Feasibility Study and the Proposed Plan. The State generally provides comments during the public comment period.

Community Acceptance. Community acceptance of the preferred alternative will be evaluated after the public comment period ends and will be described in the Record of Decision.

SUMMARY OF THE PREFERRED ALTERNATIVE

The preferred alternative for remediating the Vertac Onsite Operable Unit #1 media is Alternative 4-Option B, because this alternative is fully protective of the human health and the environment, meets or exceeds ARARs, reduces the toxicity, mobility or volume of the contaminants by treatment to the maximum extent practicable, is cost effective, and is implementable. In this alternative, contents of process vessels, spent carbon,

containerized materials (i.e., oily leachate), bagged soils, shredded trash/pallets, and transformer oil would be incinerated onsite. Buildings and process equipment would be demolished after asbestos abatement and consolidated in the onsite consolidation unit. The treatment residuals (such as incinerator ash) will be delisted and thus will no longer be subject to RCRA Subtitle C hazardous waste regulations. The treatment residuals will be managed in accordance with the RCRA Subtitle D (solid waste) requirements and/or State solid waste disposal requirements.

Environmental Indicators. In the preferred remedy approximately 6300 cubic yards of hazardous waste materials would be treated by onsite incineration and about 23,800 cubic yards of debris resulting from demolition of building and equipment would be consolidated in an onsite containment unit.

PRIVILEGED AND CONFIDENTIAL ATTORNEY WORK PRODUCT
FOIA-EXEMPT

Q: Can EPA ensure that cap maintenance and security measures be maintained in perpetuity?

A: Under CERCLA, operation and maintenance (O & M) responsibilities, which include maintaining institutional controls, generally cease for Fund-financed actions after ten years following remedial action completion. See NCP Section 300.435(f). However, no such ten-year limitation for O & M periods apply to PRP-conducted actions, and EPA lacks the authority to prevent a PRP from going bankrupt or ceasing to exist. However, EPA can require a PRP to present periodic information concerning its financial well-being, which at least would alert EPA of imminent financial problems.

Furthermore, in the instance of the Vertac site, the Vertac Receiver has expressed a willingness and desire to impose, on a voluntary basis, deed appropriate deed restrictions that will run with the land and would ensure that land use be restricted to industrial activities and would alert any future purchaser of the fact that hazardous substances are capped in place.

Generally, CERCLA's O & M requirements are modelled on RCRA's closure requirements found at 40 CFR Subpart G. Specifically, 40 CFR § 264.117 directs that post-closure requirements apply for a thirty-year period after the date of closure completion.

Q: Is there an inconsistency in the revised approach not to treat soils as a principal threat when viewing the site as a whole since soils were characterized as the principal threat in the original OU 2 proposed plan?

A: In the initial proposed plan for OU 2, treatment by incineration of approximately 8 grids of soil was a principal element in driving soil risk to an acceptable level. However, because capping beneath one foot of compacted soils is the principal element of the supplemental proposed plan for OU 2, treatment is not regarded to be appropriate or necessary. Therefore, under the revised approach, the soils no longer are regarded as posing the principal threat at the site as a whole due to the fact that treatment is not required to reduce the mobility of the dioxin in the soils prior to capping, and because once capped, the soils pose a substantially lesser threat than other media such as the drummed and tanked wastes.

Q: Is the cap proposed in the draft OU2 ROD adequate to protect

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

MAR 2 2 1991

MEMORANDUM

SUBJECT: Request for ATSDR Review of Vertac Onsite Operable Unit 1 Proposed Remedy

FROM: Sam Becker, Chief
Superfund Enforcement Branch, 6H-E

TO: Carl Hickam
ATSDR Region 6 Representative

Attached please find the EPA Region 6 proposed plan to remedy onsite operable unit 1 of the Vertac Superfund site, which is located in Jacksonville, Arkansas.

As we discussed today, this is the formal request for ATSDR to perform an expedited review, for protection of public health, of the proposed remedy.

Because the Region is expecting to propose a remedy to the public in mid-April and select a final remedy in mid-June, 1991, an expedited review by ATSDR would be greatly appreciated.

As we discussed, the Region will be happy to present the proposed remedy and supporting information, to ATSDR at any location, be it in Dallas, Atlanta, or at the site itself. Given the schedule for selecting a remedy, it is suggested that the Region meet with ATSDR sometime before April 15, 1991.

Please contact me with regard to setting up a meeting time. Of course, if you or your staff have any questions at all, please contact me or the project manager, M. S. Ramesh, at (214) 655-6582.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202-2733

MEMORANDUM

SUBJECT: Sampling in Jacksonville, Arkansas

FROM: Ragan Broyles, Chief
Removal/Sites Section (6E-ES)

TO: Betty Williamson, Chief
Superfund Management Branch (6H-M)

Carl Hickam, Senior Regional Consultant
Agency for Toxic Substances and Disease Registry

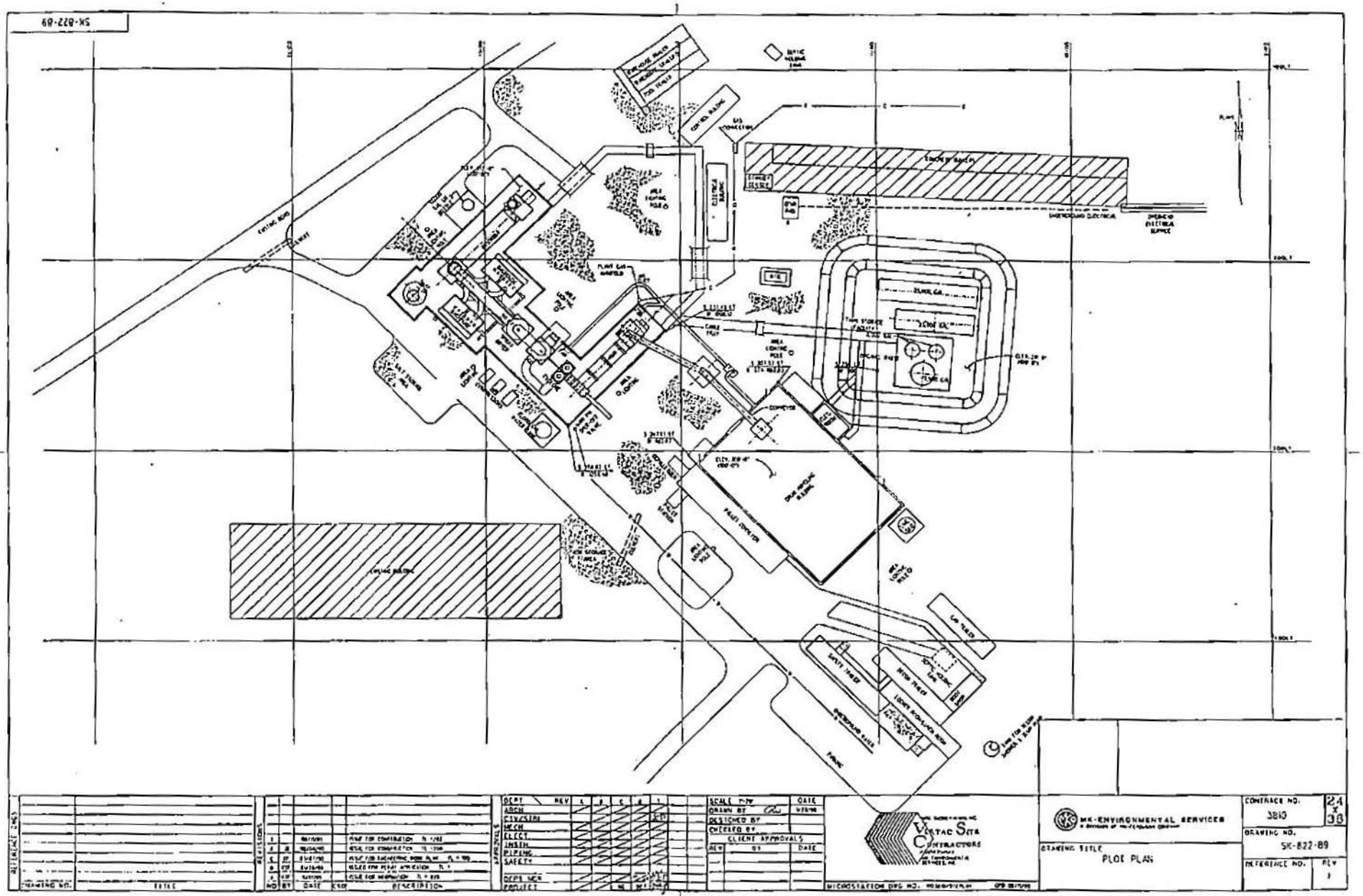
Per our discussion on July 23, 1990, the Emergency Response Branch is making the appropriate arrangements to provide for the sampling of six potential sites in the Jacksonville area. The sites are:

1. Murrill Taylor School
2. Pinewood Elementary School
3. Roy Hawks residence
4. Potential landfill identified on aerial map
5. Kelly Jones residence (Mayflower, Arkansas.
6. Construction site by Murrill Taylor School

The sampling mission will be conducted by our Technical Assistance Team (TAT) contractor and is scheduled to begin on August 13, 1990. The Kelly Jones residence has been deleted from our assessment list since Ms. Jones' attorney has not provided you with her address. In addition, our attempts to contact Ms. Jones have also been unsuccessful. Soil samples previously collected by ADPCE from the construction site near Murrill Taylor school were not analyzed for dioxins. Therefore, we have instructed our contractor to collect samples for dioxin analysis from this location.

Based on conversations between you, me and Garret Bondy, I understand the additional assessments of both, Rebel Drive and Sewer line, locations will be provided for by the Hazardous Waste Management Division.

If you have any questions, please do not hesitate in contacting me at 655-2275.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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 1, 1995

Mr. Masoud Arjmandi
Arkansas Department of
Pollution Control and Ecology
8001 National Drive
P.O. Box 8913
Little Rock, Arkansas 72219-8913

Subject: Request for Comments on the Vertac Superfund Site, Operable Unit ROD

Dear Mr. Arjmandi:

Please find enclosed the Draft Operable Unit 2 Record of Decision for the Vertac Superfund Site. We would appreciate ADPC&E's review and comments on the draft ROD as quickly as possible. EPA would like to finalize the ROD and hold an open house in Jacksonville to discuss the Remedy by December 20th.

Sincerely,

Richard Ehrhart
Remedial Project Manager

DEC 06 1995

March 3, 1986

Kenneth Schneider, M.D.
Associate Regional Administrator
Health Care Financing Administration
Department of Health and Human Services
Earl Cabell Federal Bldg.
Dallas, Texas 75270

Dear Dr. Schneider:

As we discussed by phone on February 12, 1986, I am requesting your assistance in obtaining some information from a medical laboratory under your jurisdiction.

For some time, we have been investigating hazardous waste problems in Jacksonville, Arkansas. As part of these investigations, we are evaluating the possible connection between hazardous waste disposal and the death in September 1985 of Joseph Shelton.

Urine and serum specimens from Shelton family members and preserved organ tissues of the deceased child were sent to Enviro-Health Systems, Inc., of Richardson, Texas, to be evaluated for volatile organic compounds, chlorinated phenols, and phenoxy acid herbicides. The results of these tests are presently under evaluation by our staff and the Agency for Toxic Substances and Disease Registry (ATSDR) of the Centers for Disease Control. ATSDR has the responsibility to evaluate health effects related to EPA's Superfund investigation. ATSDR has advised us that they need additional information on the laboratory protocols, procedures and quality control used in the analysis of the Shelton samples (see enclosed memorandum; February 12, 1986). This information is necessary to properly complete our evaluation of the results.

We would appreciate your help in obtaining the information detailed in the enclosure. Please let me know if I can be of any assistance in your efforts. I will look forward to your response.

Sincerely,

/s/ Frances E. Phillips for

Frances E. Phillips
Deputy Regional Administrator

Enclosures

bcc: Carl Hickum

RECORD OF COMMUNICATION

☒ PHONE CALL ☐ DISCUSSION ☐ FIELD TRIP ☐ CONFERENCE
☐ OTHER (SPECIFY)

(Record of item checked above)

TO:
Martha McKee, 6H-ES
Carl Hickum, CDC

FROM:
Dr. McChesney, AR DOH

DATE
2/4/86

TIME

SUBJECT
Air Sampling at the SIDS Death Residence Jacksonville, AR

SUMMARY OF COMMUNICATION

Dr. McChesney was calling to request EPA assistance in conducting air sampling at the former residence of the couple who's son died. He would like indoor air sampling conducted to determine the presence of any airborne contaminants.

He and other health officials, as well as ADPC&E staff, smelled "phenolic odors" in the house.

I told him I would contact air experts within EPA and see if we could provide someone to do the sampling.

My initial contacts with ESD and Air Branch staff indicated that we do not have anyone in the regional office who can do this kind of smapling.

I told Dr. McChesney that I would check, but that in the meantime, he should also seek assistance from the State Industrial Hygenist and OSHA, since they have more expertise in this area. Carl Hickum will also check with the Dallas NIOSH office to see if they can assist us.

CONCLUSIONS, ACTION TAKEN OR REQUIRED

McKee will check with NEIC and ERT-Edison and Hickum wil l check with NISOSH. Call back McChesney on Thursday.

INFORMATION COPIES
TO:
Hickum, Hannesschlager, Davis, Meachum, Fontenot